COMPOSITIONS, KITS, AND METHODS FOR IDENTIFICATION, ASSESSMENT, PREVENTION, AND THERAPY OF CERVICAL CANCER

RELATED APPLICATIONS

The present application claims priority to U.S. provisional application serial no. 60/169,811, filed on December 8, 1999, U.S. provisional application serial no. 60/171,330, filed on December 21, 1999, U.S. provisional application serial no. 60/189,113, filed on March 14, 2000, U.S. provisional application serial no. 60/193,943, filed on March 31, 2000, U.S. provisional application serial no. 60/203,772, filed on May 12, 2000, U.S. provisional application serial no. 60/210,820, filed on June 9, 2000, and U.S. provisional application serial no. 60/220,113, filed on July 21, 2000, all of which are expressly incorporated by reference.

FIELD OF THE INVENTION

The field of the invention is cervical cancer, including diagnosis, characterization, management, and therapy of cervical cancer.

BACKGROUND OF THE INVENTION

The increased number of cancer cases reported in the United States, and, indeed, around the world, is a major concern. Currently there are only a handful of treatments available for specific types of cancer, and these provide no absolute guarantee of success. In order to be most effective, these treatments require not only an early detection of the malignancy, but a reliable assessment of the severity of the malignancy.

Cancer of the cervix is one of the most common malignancies in women and remains a significant public health problem throughout the world. In the United States alone, invasive cervical cancer accounts for approximately 19% of all gynecological cancers. In 1996, it is estimated that there will be 14,700 newly diagnosed cases and 4900 deaths attributed to this disease (American Cancer Society, Cancer Facts & Figures 1996, Atlanta, Ga.: American Cancer Society, 1996). In many developing countries, where mass screening programs are not widely available, the clinical problem is more serious. Worldwide, the number of new cases is estimated to be 471,000 with a four-year survival rate of only 40% (Munoz et al., 1989, *Epidemiology of Cervical Cancer* In:

"Human Papillomavirus", New York, Oxford Press, pp 9-39; National Institutes of Health, Consensus Development Conference Statement on Cervical Cancer, Apr.1-3, 1996).

The precursor to cervical cancer is dysplasia, also known in the art as cervical intraepithelial neoplasia (CIN) or squamous intraepithelial lesions (SIL). While it is not understood how normal cells become transformed, the concept of a continuous spectrum of histopathological change from normal, stratified epithelium through CIN to invasive cancer has been widely accepted for many years. A large body of epidemiological and molecular biological evidence has established human papillomavirus (HPV) infection as a causative factor in cervical cancer. HPV is found in 85% or more of squamous cell invasive lesions, which represent the most common histologic type seen in cervical carcinoma. Additional cofactors have also been identified, including oncogenes that have been activated by point mutations and chromosomal translocations or deletions.

In light of this, cervical cancer remains a highly preventable form of cancer when pre-invasive lesions are detected early. Cytological examination of Papanicolaou-stained cervical smears (also referred to as Pap smears) is currently the principle method for detecting cervical cancer. Not surprisingly, the effectiveness of Pap smear screening varies depending not only upon the quality of the sample being used, but also upon subjective parameters that are inherent to the analysis. In addition, despite the historical success of the test, concerns have arisen regarding its ability to reliably predict the behavior of some pre-invasive lesions (Ostor *et al.*, 1993, *Int. J. Gynecol. Pathol.* 12: 186-192; and Genest *et al.*, 1993, *Human Pathol.* 24: 730-736).

It would be therefore be desirable to provide specific methods and reagents for the diagnosis, staging, prognosis, monitoring, and treatment of diseases associated with cervical cancer, or to indicate a predisposition to such for preventative measures.

SUMMARY OF THE INVENTION

The invention relates to a method of assessing whether a patient is afflicted with cervical cancer. "Cervical cancer " as used herein includes pre-malignant conditions, *e.g.,* CIN and SIL. The method of the present invention comprises the step of comparing the level of expression of a marker in a patient sample, wherein the marker is listed within Tables 1-13, and the normal level of expression of the marker in a control, *e.g.,* a sample from a patient without cervical cancer. A significant difference

between the level of expression of the marker in the patient sample and the normal level is an indication that the patient is afflicted with cervical cancer or has a pre-malignant condition (*e.g.*, CIN and/or SIL).

In one method, the marker(s) are preferably selected such that the positive predictive value of the method is at least about 10%. Also preferred are embodiments of the method wherein the marker is differentially expressed by at least two-fold in at least about 20% of any of the following conditions: stage 0 cervical cancer patients, stage I cervical cancer patients, stage II cervical cancer patients, stage III cervical cancer patients, stage IV cervical cancer patients, grade I cervical cancer patients, grade II cervical cancer patients, grade III cervical cancer patients, squamous cell (epidermoid) cervical cancer patients, cervical adenocarcinoma patients, cervical adenosquamous carcinoma patients, small-cell cervical carcinoma patients, malignant cervical cancer patients, patients with primary carcinomas of the cervix, patients with primary malignant lymphomas of the cervix and patients with secondary malignant lymphomas of the cervix, and all other types of cancers, malignancies and transformations associated with the cervix.

In one embodiment of the methods of the present invention, the sample comprises cells obtained from the patient. The cells may be found in a cervical smear collected, for example, by a cervical brush. In another embodiment, the patient sample is a cervical-associated body fluid. Such fluids include, for example, blood fluids, lymph, ascitic fluids, gynecological fluids, urine, and fluids collected by peritoneal rinsing.

In accordance with the methods of the present invention, the presence and/or level of expression of the marker in a sample can be assessed, for example, by detecting the presence in the sample of :

- a protein corresponding to the marker or a fragment of the protein (*e.g.* using a reagent, such as an antibody, an antibody derivative, or an antibody fragment, which binds specifically with the protein or protein fragment)
- a metabolite which is produced directly (*i.e.,* catalyzed) or indirectly by a protein corresponding to the marker
- a transcribed polynucleotide (*e.g.* an mRNA or a cDNA), or fragment thereof, having at least a portion with which the marker is substantially homologous (*e.g.* by contacting a mixture of transcribed polynucleotides obtained from the sample with a substrate having one or more of the markers listed within Tables 1-13 fixed thereto at selected positions)

- a transcribed polynucleotide or fragment thereof, wherein the polynucleotide anneals with the marker under stringent hybridization conditions.

The methods of the present invention are particularly useful for identifying patients with a pre-malignant condition such as CIN and/or SIL. The methods are also useful for further diagnosing patients having an identified cervical mass or symptoms associated with cervical cancer. The methods of the present invention can further be of particular use with patients having an enhanced risk of developing cervical cancer (*e.g.*, patients having a familial history of cervical cancer and patients identified as having a mutant oncogene). The methods of the present invention may further be of particular use in monitoring the efficacy of treatment of a cervical cancer patient (*e.g.* the efficacy of chemotherapy).

The methods of the present invention may be performed using a plurality (*e.g.* 2, 3, 5, or 10 or more) of markers. According to a method involving a plurality of markers, the level of expression in the sample of each of a plurality of markers independently selected from the markers listed in Tables 1-13 is compared with the normal level of expression of each of the plurality of markers in samples of the same type obtained from control humans not afflicted with cervical cancer. A significantly enhanced level of expression in the sample of one or more of the markers listed in Tables 1-13, or some combination thereof, relative to that marker's corresponding normal levels, is an indication that the patient is afflicted with cervical cancer. The markers of Tables 1-13 may also be used in combination with known cervical cancer markers in the methods of the present invention.

In a preferred method of assessing whether a patient is afflicted with cervical cancer (*e.g.*, new detection ("screening"), detection of recurrence, reflex testing), the method comprises comparing:

a) the level of expression of a marker in a patient sample, wherein at least one marker is selected from the markers of Tables 1-13, and

b) the normal level of expression of the marker in a control non-cervical cancer sample.

A significant difference between the level of expression of the marker in the patient sample and the normal level is an indication that the patient is afflicted with cervical cancer.

The invention further relates to a method of assessing the efficacy of a therapy for inhibiting cervical cancer in a patient. This method comprises comparing:

a) expression of a marker in a first sample obtained from the patient prior to providing at least a portion of the therapy to the patient, wherein the

marker is selected from the group consisting of the markers listed within Tables 1-13, and

b) expression of the marker in a second sample obtained from the patient following provision of the portion of the therapy.

A significantly lower level of expression of the marker in the second sample, relative to the first sample, is an indication that the therapy is efficacious for inhibiting cervical cancer in the patient.

It will be appreciated that in this method the "therapy" may be any therapy for treating cervical cancer including, but not limited to, chemotherapy, radiation therapy and surgical removal of tissue, *e.g.,* a cervical tumor. Thus, the methods of the invention may be used to evaluate a patient before, during and after therapy, for example, to evaluate the reduction in tumor burden.

The present invention therefore further comprises a method for monitoring the progression of cervical cancer in a patient, the method comprising:

a) detecting in a patient sample at a first time point, the expression of a marker, wherein the marker is selected from the group consisting of the markers listed in Tables 1-13;

b) repeating step a) at a subsequent time point in time; and

c) comparing the level of expression detected in steps a) and b), and therefrom monitoring the progression of cervical cancer in the patient.

The invention also includes a method of selecting a composition for inhibiting cervical cancer in a patient. This method comprises the steps of:

a) obtaining a sample comprising cancer cells from the patient;

b) separately maintaining aliquots of the sample in the presence of a plurality of test compositions;

c) comparing expression of a marker listed within Tables 1-13 in each of the aliquots; and

d) selecting one of the test compositions which induces a lower level of expression of the marker in the aliquot containing that test composition, relative to other test compositions.

In addition, the invention includes a method of inhibiting cervical cancer in a patient. This method comprises the steps of:

a) obtaining a sample comprising cancer cells from the patient;

b) separately maintaining aliquots of the sample in the presence of a plurality of test compositions;

c) comparing expression of a marker listed within Tables 1-13 in each of the aliquots; and

d) administering to the patient at least one of the test compositions which induces a lower level of expression of the marker in the aliquot containing that test composition, relative to other test compositions.

The invention also includes a kit for assessing whether a patient is afflicted with cervical cancer. This kit comprises reagents for assessing expression of a marker listed within Tables 1-13.

In another aspect, the invention relates to a kit for assessing the suitability of each of a plurality of compounds for inhibiting a cervical cancer in a patient. The kit comprises a reagent for assessing expression of a marker listed within Tables 1-13, and may also comprise a plurality of compounds.

In another aspect, the invention relates to a kit for assessing the presence of cervical cancer cells. This kit comprises an antibody, wherein the antibody binds specifically with a protein corresponding to a marker listed within Tables 1-13. The kit may also comprise a plurality of antibodies, wherein the plurality binds specifically with a protein corresponding to a different marker listed within Tables 1-13.

The invention also includes a kit for assessing the presence of cervical cancer cells, wherein the kit comprises a nucleic acid probe. The probe binds specifically with a transcribed polynucleotide corresponding to a marker listed within Tables 1-13. The kit may also comprise a plurality of probes, wherein each of the probes binds specifically with a transcribed polynucleotide corresponding to a different marker listed within Tables 1-13.

The invention further relates to a method of making an isolated hybridoma which produces an antibody useful for assessing whether a patient is afflicted with cervical cancer. The method comprises isolating a protein or protein fragment corresponding to a marker listed within Tables 1-13, immunizing a mammal using the isolated protein or protein fragment, isolating splenocytes from the immunized mammal, fusing the isolated splenocytes with an immortalized cell line to form hybridomas, and screening individual hybridomas for production of an antibody which specifically binds with the protein or protein fragment to isolate the hybridoma. The invention also includes an antibody produced by this method.

The invention further includes a method of assessing the cervical carcinogenic potential of a test compound. This method comprises the steps of:

a) maintaining separate aliquots of cervical cells in the presence and absence of the test compound; and

b) comparing expression of a marker in each of the aliquots.

The marker is selected from those listed within Tables 1-13. A significantly enhanced level of expression of the marker in the aliquot maintained in the

presence of (or exposed to) the test compound, relative to the aliquot maintained in the absence of the test compound, is an indication that the test compound possesses cervical carcinogenic potential.

Additionally, the invention includes a kit for assessing the cervical carcinogenic potential of a test compound. The kit comprises cervical cells and a reagent for assessing expression of a marker in each of the aliquots. The marker is selected from those listed within Tables 1-13.

The invention further relates to a method of treating a patient afflicted with cervical cancer. This method comprises providing to cells of the patient an antisense oligonucleotide complementary to a polynucleotide corresponding to a marker listed within Tables 1-13.

The invention includes a method of inhibiting cervical cancer in a patient at risk for developing cervical cancer. This method comprises inhibiting expression or overexpression of a gene corresponding to a marker listed within Tables 1-13.

It will be appreciated that the methods and kits of the present invention may also include known cancer markers including known cervical cancer markers. It will further be appreciated that the methods and kits may be used to identify cancers other than cervical cancer.

DETAILED DESCRIPTION OF THE INVENTION

The invention relates to newly discovered correlations between expression of certain markers and the cancerous state of cervical cells. It has been discovered that the level of expression of individual markers and combinations of markers described herein correlates with the presence of cervical cancer or a pre-malignant condition in a patient. Methods are provided for detecting the presence of cervical cancer in a sample, the absence of cervical cancer in a sample, the stage of a cervical cancer, and with other characteristics of cervical cancer that are relevant to prevention, diagnosis, characterization and therapy of cervical cancer in a patient. As used herein, "cervical cancer" includes pre-malignant conditions including CIN and SIL.

Definitions

As used herein, each of the following terms has the meaning associated with it in this section.

The articles "a" and "an" are used herein to refer to one or to more than one (*i.e.* to at least one) of the grammatical object of the article. By way of example, "an element" means one element or more than one element.

A "marker" is a naturally-occurring polymer corresponding to at least one of the nucleic acids listed within Tables 1-13. For example, markers include, without limitation, sense and anti-sense strands of genomic DNA (*i.e.* including any introns occurring therein), RNA generated by transcription of genomic DNA (*i.e.* prior to splicing), RNA generated by splicing of RNA transcribed from genomic DNA, and proteins generated by translation of spliced RNA (*i.e.* including proteins both before and after cleavage of normally cleaved regions such as transmembrane signal sequences). As used herein, "marker" may also include a cDNA made by reverse transcription of an RNA generated by transcription of genomic DNA (including spliced RNA).

As used herein a "polynucleotide corresponds to" another (a first) polynucleotide if it is related to the first polynucleotide by any of the following relationships: The second polynucleotide comprises the first polynucleotide and the second polynucleotide encodes a gene product; 2) The second polynucleotide is 5' or 3' to the first polynucleotide in cDNA, RNA, genomic DNA, or fragment of any of these polynucleotides. For example, a second polynucleotide may be a fragment of a gene that includes the first and second polynucleotides. The first and second polynucleotides are related in that they are components of the gene coding for a gene product, such as a protein or antibody. However, it is not necessary that the second polynucleotide comprises or overlaps with the first polynucleotide to be encompassed within the definition of "corresponding to" as used herein. For example, the first polynucleotide may be a fragment of a 3' untranslated region of the second polynucleotide. The first and second polynucleotide may be fragments of a gene coding for a gene product. The second polynucleotide may be an exon of the gene while the first polynucleotide may be an intron of the gene; 3) The second polynucleotide is the complement of the first polynucleotide.

The term "probe" refers to any molecule which is capable of selectively binding to a specifically intended target molecule, for example a marker of the invention. Probes can be either synthesized by one skilled in the art, or derived from appropriate biological preparations. For purposes of detection of the target molecule, probes may be specifically designed to be labeled, as described herein. Examples of molecules that can be utilized as probes include, but are not limited to, RNA, DNA, proteins, antibodies, and organic monomers.

A "cervical-associated" body fluid is a fluid which, when in the body of a patient, contacts or passes through cervical cells or into which cells or proteins shed from cervical cells are capable of passing. Exemplary cervical-associated body fluids include blood fluids, lymph, ascites, gynecological fluids, cystic fluid, urine, and fluids collected by peritoneal rinsing.

The "normal" level of expression of a marker is the level of expression of the marker in cervical cells of a patient, *e.g.* a human, not afflicted with cervical cancer.

"Over-expression" and "under-expression" of a marker refer to expression of the marker of a patient at a greater or lesser level, respectively, than normal level of expression of the marker (*e.g.* at least two-fold greater or lesser level).

As used herein, the term "promoter/regulatory sequence" means a nucleic acid sequence which is required for expression of a gene product operably linked to the promoter/regulatory sequence. In some instances, this sequence may be the core promoter sequence and in other instances, this sequence may also include an enhancer sequence and other regulatory elements which are required for expression of the gene product. The promoter/regulatory sequence may, for example, be one which expresses the gene product in a tissue-specific manner.

A "constitutive" promoter is a nucleotide sequence which, when operably linked with a polynucleotide which encodes or specifies a gene product, causes the gene product to be produced in a living human cell under most or all physiological conditions of the cell.

An "inducible" promoter is a nucleotide sequence which, when operably linked with a polynucleotide which encodes or specifies a gene product, causes the gene product to be produced in a living human cell substantially only when an inducer which corresponds to the promoter is present in the cell.

A "tissue-specific" promoter is a nucleotide sequence which, when operably linked with a polynucleotide which encodes or specifies a gene product, causes the gene product to be produced in a living human cell substantially only if the cell is a cell of the tissue type corresponding to the promoter.

A "transcribed polynucleotide" is a polynucleotide (*e.g.* an RNA, a cDNA, or an analog of one of an RNA or cDNA) which is complementary to or homologous with all or a portion of a mature RNA made by transcription of a genomic DNA corresponding to a marker of the invention and normal post-transcriptional processing (*e.g.* splicing), if any, of the transcript.

"Complementary" refers to the broad concept of sequence complementarity between regions of two nucleic acid strands or between two regions of the same nucleic acid strand. It is known that an adenine residue of a first nucleic acid region is capable of forming specific hydrogen bonds ("base pairing") with a residue of a second nucleic acid region which is antiparallel to the first region if the residue is thymine or uracil. Similarly, it is known that a cytosine residue of a first nucleic acid strand is capable of base pairing with a residue of a second nucleic acid strand which is antiparallel to the first strand if the residue is guanine. A first region of a nucleic acid is

complementary to a second region of the same or a different nucleic acid if, when the two regions are arranged in an antiparallel fashion, at least one nucleotide residue of the first region is capable of base pairing with a residue of the second region. Preferably, the first region comprises a first portion and the second region comprises a second portion, whereby, when the first and second portions are arranged in an antiparallel fashion, at least about 50%, and preferably at least about 75%, at least about 90%, or at least about 95% of the nucleotide residues of the first portion are capable of base pairing with nucleotide residues in the second portion. More preferably, all nucleotide residues of the first portion are capable of base pairing with nucleotide residues in the second portion.

"Homologous" as used herein, refers to nucleotide sequence similarity between two regions of the same nucleic acid strand or between regions of two different nucleic acid strands. When a nucleotide residue position in both regions is occupied by the same nucleotide residue, then the regions are homologous at that position. A first region is homologous to a second region if at least one nucleotide residue position of each region is occupied by the same residue. Homology between two regions is expressed in terms of the proportion of nucleotide residue positions of the two regions that are occupied by the same nucleotide residue. By way of example, a region having the nucleotide sequence 5'-ATTGCC-3' and a region having the nucleotide sequence 5'-TATGGC-3' share 50% homology. Preferably, the first region comprises a first portion and the second region comprises a second portion, whereby, at least about 50%, and preferably at least about 75%, at least about 90%, or at least about 95% of the nucleotide residue positions of each of the portions are occupied by the same nucleotide residue. More preferably, all nucleotide residue positions of each of the portions are occupied by the same nucleotide residue.

A marker is "fixed" to a substrate if it is covalently or non-covalently associated with the substrate such the substrate can be rinsed with a fluid (*e.g.* standard saline citrate, pH 7.4) without a substantial fraction of the marker dissociating from the substrate.

As used herein, a "naturally-occurring" nucleic acid molecule refers to an RNA or DNA molecule having a nucleotide sequence that occurs in nature (*e.g.* encodes a natural protein).

Expression of a marker in a patient is "significantly" higher than the normal level of expression of a marker if the level of expression of the marker is greater than the normal level by an amount greater than the standard error of the assay employed to assess expression, and preferably at least twice, and more preferably three, four, five or ten times that amount. Alternately, expression of the marker in the patient

can be considered "significantly" higher or lower than the normal level of expression if the level of expression is at least about two, and preferably at least about three, four, or five times, higher or lower, respectively, than the normal level of expression of the marker.

Cervical cancer is "inhibited" if at least one symptom of the cancer is alleviated, terminated, slowed, or prevented. As used herein, cervical cancer is also "inhibited" if recurrence or metastasis of the cancer is reduced, slowed, delayed, or prevented.

A kit is any manufacture (*e.g.* a package or container) comprising at least one reagent, *e.g.* a probe, for specifically detecting a marker of the invention, the manufacture being promoted, distributed, or sold as a unit for performing the methods of the present invention.

Description

The present invention is based, in part, on identification of markers which are differentially expressed in cervical cancer cells than they are in normal (*i.e.* non-cancerous) cervical cells. The markers of the invention correspond to nucleic acid, and polypeptide molecules which can be detected in one or both of normal and cancerous cervical cells. The presence, absence, or level of expression of one or more of these markers in cervical cells is herein correlated with the cancerous state of the tissue. The invention thus includes compositions, kits, and methods for assessing the cancerous state of cervical cells (*e.g.* cells obtained from a human, cultured human cells, archived or preserved human cells and *in vivo* cells).

The compositions, kits, and methods of the invention have the following uses, among others:

1) assessing whether a patient is afflicted with cervical cancer, includes assessing whether the patient has a pre-malignant condition, *e.g.*, CIN and/or SIL;

2) assessing the stage of cervical cancer in a human patient;

3) assessing the grade of cervical cancer in a patient;

4) assessing the benign or malignant nature of cervical cancer in a patient;

5) assessing the histological type of neoplasm (*e.g.* squamous cell, small cell, etc) associated with cervical cancer in a patient;

6) making an isolated hybridoma which produces an antibody useful for assessing whether a patient is afflicted with cervical cancer;

7) assessing the presence of cervical cancer cells;

8) assessing the efficacy of one or more test compounds for inhibiting cervical cancer in a patient;
9) assessing the efficacy of a therapy for inhibiting cervical cancer in a patient;
10) monitoring the progression of cervical cancer in a patient;
11) selecting a composition or therapy for inhibiting cervical cancer in a patient;
12) treating a patient afflicted with cervical cancer;
13) inhibiting cervical cancer in a patient;
14) assessing the cervical carcinogenic potential of a test compound; and
15) inhibiting cervical cancer in a patient at risk for developing cervical cancer.

The invention thus includes a method of assessing whether a patient is afflicted with cervical cancer which includes assessing whether the patient has a pre-malignant condition. This method comprises comparing the level of expression of a marker in a patient sample and the normal level of expression of the marker in a control, *e.g.*, a non-cervical cancer sample. A significant difference between the level of expression of the marker in the patient sample and the normal level is an indication that the patient is afflicted with cervical cancer. The marker is selected from the group consisting of the markers listed within Tables 1-13. Although one or more molecules corresponding to some of the markers listed within the Tables may have been described by others, the significance of the level of expression of these markers with regard to the cancerous state of cervical cells has not previously been recognized.

The invention also encompasses polynucleotides which differ from that of the polynucleotides described above, but which produce the same phenotypic effect, such as an allelic variant. These altered, but phenotypically equivalent polynucleotides are referred to as "equivalent nucleic acids." This invention also encompasses polynucleotides characterized by changes in non-coding regions that do not alter the polypeptide produced therefrom when compared to the polynucleotide herein. This invention further encompasses polynucleotides, which hybridize to the polynucleotides of the subject invention under conditions of moderate or high stringency. Alternatively, the polynucleotides are at least 85%, or at least 90%, or more preferably, greater or equal to 95% identical as determined by a sequence alignment program when run under default parameters.

Also provided in the present invention are polypeptides encoded by the sequences of Tables 1-13, which until the instant invention, were unknown to be differentially expressed in cervical cancer. Further embodied in the polypeptides of the present invention are novel sequences including fragments thereof or complements thereof encoded by the nucleotides set forth in Tables 1-13, or that hybridize to the same coding sequence.

Table 1 shows expression profiles for marker sequences in tissue samples from four different stage IB cervical tumors and two different pre-cancerous cervical tissues (cervical intraepithelial neoplasia; CIN III). These are compared to mean expression in four non-cancerous cervical tissues. The 2068 sequences included in Table 1 are:

(1) expressed at least five-fold higher in at least one of the four stage IB tumor tissues than in non-cancerous control tissue, and/or
(2) expressed at least three-fold higher in at least two of the four stage IB tumor tissues than in non-cancerous control tissue, and/or
(3) expressed at least three-fold higher in at least one of the two pre-cancerous tissues (CIN III) than in non-cancerous control tissue,

(some data from Table 2 is included for comparison.)

Table 2 shows sequences whose expression was increased at least three-fold in RNA pooled from six different cervical ectoepithelial cancer cell lines over that of RNA pooled from three non-cancerous ectoepithelial cervical cell lines.

Table 3 shows sequences which exhibited at least three-fold elevated expression, but not more than five-fold elevated expression, in one of the four stage IB tumor tissue samples as compared to non-cancerous control tissue.

Table 4 shows sequences from Table 1 which were also identified through subtracted library experiments outlined herein.

Table 5 shows sequences from Table 2 which were also identified through subtracted library experiments outlined herein.

Table 6 shows sequences from Table 3 which were also identified through subtracted library experiments outlined herein.

Table 7 shows preferred sequences from Table 1. These sequences are expressed at least three-fold higher in at least two of the four stage IB tumor tissues and in at least one of the two pre-cancerous (CIN III) tissues as compared to expression in non-cancerous control tissue.

Tables 8A and 8B show marker nucleotide sequences that were identified through subtracted library experiments described herein.

Table 8A-1 depicts the accession number "ACC Num" of markers of the present invention with the corresponding GenBank GI number ("GI Nbr").

Table 9 shows preferred sequences which are expressed at least three-fold higher in at least one of two CINIII tissues as compared to expression in non-cancerous control tissue.

Table 10 shows sequences whose expression is increased at least three-fold in RNA from cultured cervical cells collected one passage after infection with retroviruses containing human papillomavirus (HPV) genes from HPV-16 and HPV-6b compared with RNA from cultured cervical cells collected one passage after infection with a control retrovirus. Table 10 also shows sequences whose expression is increased at least three-fold in RNA from cultured cervical cells collected one passage after infection with a retrovirus containing genes from high risk HPV-16 compared with RNA from cultured cervical cells collected one passage after infection with a retrovirus containing genes from low- risk HPV-6b.

Table 11 shows sequences whose expression is increased at least three-fold in RNA from cultured cervical cells collected 6 passages after infection with a retrovirus containing genes from high-risk HPV-16 compared with RNA from cultured cervical cells collected 6 passages after infection with a retrovirus containing genes from low-risk HPV-6b.

Table 12 shows sequences whose expression is increased at least three-fold in RNA from cultured cervical cells collected 20 passages after infection with a retrovirus containing genes from HPV-16 compared to RNA from cultured cervical cells collected 1 and/or 6 passages after infection with the same retrovirus.

Table 13 shows preferred markers of the present invention. The markers were identified through statistical analysis of expression profiles for markers in 9 cervical tumors, 5 CIN III tissues and 3 adenocarcinoma samples compared with 9 normal ecto-cervical, 3 endo-cervical and 5 CIN I tissue samples.

Any marker or combination of markers listed within Tables 1-13, as well as any known markers in combination with the markers set forth within Tables 1-13, may be used in the compositions, kits, and methods of the present invention. Use of markers listed in Tables 1, 4, 7, 8, 9 and 13 are preferred, wherein the markers of Tables 4 and 9 are more preferred, and the markers of Table 13 are most preferred. In general, it is preferable to use markers for which the difference between the level of expression of the marker in cervical cancer cells and the level of expression of the same marker in normal cervical cells is as great as possible. Although this difference can be as small as the limit of detection of the method for assessing expression of the marker, it is preferred that the difference be at least greater than the standard error of the assessment

method, and preferably a difference of at least 2-, 3-, 4-, 5-, 6-, 7-, 8-, 9-, 10-, 15-, 20-, 25-, 100-, 500-, 1000-fold or greater.

It will be appreciated that patient samples containing cervical cells may be used in the methods of the present invention. In these embodiments, the level of expression of the marker can be assessed by assessing the amount (*e.g.* absolute amount or concentration) of the marker in a cervical cell sample, *e.g.*, cervical smear obtained from a patient. The cell sample can, of course, be subjected to a variety of well-known post-collection preparative and storage techniques (*e.g.* fixation, storage, freezing, ultrafiltration, concentration, evaporation, centrifugation, etc.) prior to assessing the amount of the marker in the sample. Likewise, cervical smears may also be subjected to post-collection preparative and storage techniques, *e.g.*, fixation.

It will also be appreciated that certain markers correspond to proteins or fragments thereof, which are secreted from cervical cells (*i.e.* one or both of normal and cancerous cells) to the extracellular space surrounding the cells. These markers are preferably used in certain embodiments of the compositions, kits, and methods of the invention, owing to the fact that the protein or fragment thereof, corresponding to each of these markers can be detected in a cervical-associated body fluid sample. In addition, preferred *in vivo* techniques for detection of a protein or fragment thereof, corresponding to a marker of the invention include introducing into a subject a labeled antibody directed against the protein or fragment. For example, the antibody can be labeled with a radioactive marker whose presence and location in a subject can be detected by standard imaging techniques.

Although not every marker corresponding to a secreted protein is indicated as such herein, it is a simple matter for the skilled artisan to determine whether any particular marker corresponds to a secreted protein. In order to make this determination, the protein corresponding to a marker is expressed in a test cell (*e.g.* a cell of a cervical cell line), extracellular fluid is collected, and the presence or absence of the protein in the extracellular fluid is assessed (*e.g.* using a labeled antibody which binds specifically with the protein).

The following is an example of a method which can be used to detect secretion of a protein corresponding to a marker of the invention. About 8×10^5 293T cells are incubated at 37°C in wells containing growth medium (Dulbecco's modified Eagle's medium {DMEM} supplemented with 10% fetal bovine serum) under a 5% (v/v) CO_2, 95% air atmosphere to about 60-70% confluence. The cells are then transfected using a standard transfection mixture comprising 2 micrograms of DNA comprising an expression vector encoding the protein and 10 microliters of LipofectAMINE™ (GIBCO/BRL Catalog no. 18342-012) per well. The transfection

mixture is maintained for about 5 hours, and then replaced with fresh growth medium and maintained in an air atmosphere. Each well is gently rinsed twice with DMEM which does not contain methionine or cysteine (DMEM-MC; ICN Catalog no. 16-424-54). About 1 milliliter of DMEM-MC and about 50 microcuries of Trans-^{35}S™ reagent (ICN Catalog no. 51006) are added to each well. The wells are maintained under the 5% CO_2 atmosphere described above and incubated at 37°C for a selected period. Following incubation, 150 microliters of conditioned medium is removed and centrifuged to remove floating cells and debris. The presence of the protein in the supernatant is an indication that the protein is secreted.

Examples of cervical-associated body fluids include blood fluids (*e.g.* whole blood, blood serum, blood having platelets removed therefrom, etc.), lymph, ascitic fluids, gynecological fluids (*e.g.* cervix, fallopian, and uterine secretions, menses, vaginal douching fluids, fluids used to rinse cervical cell samples, etc.), cystic fluid, urine, and fluids collected by peritoneal rinsing (*e.g.* fluids applied and collected during laparoscopy or fluids instilled into and withdrawn from the peritoneal cavity of a human patient). Many cervical-associated body fluids (*i.e.* usually excluding urine) can have cervical cells therein, particularly when the cervical cells are cancerous, and, more particularly, when the cervical cancer is metastasizing. Cell-containing fluids which can contain cervical cancer cells include, but are not limited to, peritoneal ascites, fluids collected by peritoneal rinsing, fluids collected by uterine rinsing, uterine fluids such as uterine exudate and menses, pleural fluid, and cervical exudates. Thus, the compositions, kits, and methods of the invention can be used to detect expression of markers corresponding to proteins having at least one portion which is displayed on the surface of cells which express it. Although the proteins having at least one cell-surface portion are not set forth herein, it is a simple matter for the skilled artisan to determine whether the protein corresponding to any particular marker comprises a cell-surface protein. For example, immunological methods may be used to detect such proteins on whole cells, or well known computer-based sequence analysis methods (*e.g.* the SIGNALP program; Nielsen *et al.*, 1997, *Protein Engineering* 10:1-6) may be used to predict the presence of at least one extracellular domain (*i.e.* including both secreted proteins and proteins having at least one cell-surface domain). Expression of a marker corresponding to a protein having at least one portion which is displayed on the surface of a cell which expresses it may be detected without necessarily lysing the cell (*e.g.* using a labeled antibody which binds specifically with a cell-surface domain of the protein).

Expression of a marker of the invention may be assessed by any of a wide variety of well known methods for detecting expression of a transcribed molecule

or protein. Non-limiting examples of such methods include immunological methods for detection of secreted, cell-surface, cytoplasmic, or nuclear proteins, protein purification methods, protein function or activity assays, nucleic acid hybridization methods, nucleic acid reverse transcription methods, and nucleic acid amplification methods. *In situ* hybridization (ISH) and immunohistochemistry (IHC) methods are preferred.

In one embodiment, expression of a marker is assessed using an antibody (*e.g.* a radio-labeled, chromophore-labeled, fluorophore-labeled, or enzyme-labeled antibody), an antibody derivative (*e.g.* an antibody conjugated with a substrate or with the protein or ligand of a protein-ligand pair {*e.g.* biotin-streptavidin}), or an antibody fragment (*e.g.* a single-chain antibody, an isolated antibody hypervariable domain, etc.) which binds specifically with a protein or fragment of a protein, corresponding to the marker, such as the protein encoded by the open reading frame corresponding to the marker or such a protein which has undergone all or a portion of its normal post-translational modification.

In another one embodiment, expression of a marker is assessed by preparing mRNA/cDNA (*i.e.* a transcribed polynucleotide) from cells in a patient sample, and by hybridizing the mRNA/cDNA with a reference polynucleotide which is a complement of a polynucleotide comprising the marker, and fragments thereof. cDNA can, optionally, be amplified using any of a variety of polymerase chain reaction methods prior to hybridization with the reference polynucleotide. Expression of one or more markers can likewise be detected using quantitative PCR to assess the level of expression of the marker(s). Alternatively, any of the many known methods of detecting mutations or variants (*e.g.* single nucleotide polymorphisms, deletions, etc.) of a marker of the invention may be used to detect occurrence of a marker in a patient.

In a related embodiment, a mixture of transcribed polynucleotides obtained from the sample is contacted with a substrate having fixed thereto a polynucleotide complementary to or homologous with at least a portion (*e.g.* at least 7, 10, 15, 20, 25, 30, 40, 50, 100, 500, or more nucleotide residues) of a marker of the invention. If polynucleotides complementary to or homologous with are differentially detectable on the substrate (*e.g.* detectable using different chromophores or fluorophores, or fixed to different selected positions), then the levels of expression of a plurality of markers can be assessed simultaneously using a single substrate (*e.g.* a "gene chip" microarray of polynucleotides fixed at selected positions). When a method of assessing marker expression is used which involves hybridization of one nucleic acid with another, it is preferred that the hybridization be performed under stringent hybridization conditions.

Because the compositions, kits, and methods of the invention rely on detection of a difference in expression levels of one or more markers of the invention, it is preferable that the level of expression of the marker is significantly greater than the minimum detection limit of the method used to assess expression in at least one of normal cervical cells and cancerous cervical cells.

It is understood that by routine screening of additional patient samples using one or more of the markers of the invention, it will be realized that certain of the markers are over- (or under-)expressed in cancers of various types, including specific cervical cancers, as well as other cancers such as ovarian cancer, breast cancer, etc. For example, it will be confirmed that some of the markers of the invention are over-expressed in most (*i.e.* 50% or more) or substantially all (*i.e.* 80% or more) of cervical cancer. Furthermore, it will be confirmed that certain of the markers of the invention are associated with cervical cancer of various stages (*i.e.* stage 0, I, II, III, and IV cervical cancers, as well as subclassifications IA1, IA2, IB, IB1, IB2, IIA, IIB, IIIA, IIIB, IVA, and IVB, using the FIGO Stage Grouping system for primary carcinoma of the cervix (see Gynecologic Oncology, 1991, 41:199 and Cancer, 1992, 69:482)), of various histologic subtypes (*e.g.* squamous cell carcinomas and squamous cell carcinoma variants such as verrucous carcinoma, lymphoepithelioma-like carcinoma, papillary squamous neoplasm and spindle cell squamous cell carcinoma (see Cervical Cancer and Preinvasive Neoplasia, 1996, pp. 90-91) serous, mucinous, endometrioid, and clear cell subtypes, as well as subclassifications and alternate classifications adenocarcinoma, papillary adenocarcinoma, papillary cystadenocarcinoma, surface papillary carcinoma, malignant adenofibroma, cystadenofibroma, adenocarcinoma, cystadenocarcinoma, adenoacanthoma, endometrioid stromal sarcoma, mesodermal {Müllerian} mixed tumor, malignant carcinoma, Brenner tumor, mixed epithelial tumor, and undifferentiated carcinoma, using the WHO/FIGO system for classification of malignant cervical tumors; Scully, *Atlas of Tumor Pathology*, 3d series, Washington DC), and various grades (*i.e.* grade I {well differentiated} , grade II {moderately well differentiated}, and grade III {poorly differentiated from surrounding normal tissue}). In addition, as a greater number of patient samples are assessed for expression of the markers of the invention and the outcomes of the individual patients from whom the samples were obtained are correlated, it will also be confirmed that altered expression of certain of the markers of the invention are strongly correlated with malignant cancers and that altered expression of other markers of the invention are strongly correlated with benign tumors. The compositions, kits, and methods of the invention are thus useful for characterizing one or more of the stage, grade, histological type, and benign/malignant nature of cervical cancer in patients.

When the compositions, kits, and methods of the invention are used for characterizing one or more of the stage, grade, histological type, and benign/malignant nature of cervical cancer in a patient, it is preferred that the marker or panel of markers of the invention is selected such that a positive result is obtained in at least about 20%, and preferably at least about 40%, 60%, or 80%, and more preferably in substantially all patients afflicted with a cervical cancer of the corresponding stage, grade, histological type, or benign/malignant nature. Preferably, the marker or panel of markers of the invention is selected such that a positive predictive value (PPV) of greater than about 10% is obtained for the general population (more preferably coupled with an assay specificity greater than 99.5%).

When a plurality of markers of the invention are used in the compositions, kits, and methods of the invention, the level of expression of each marker in a patient sample can be compared with the normal level of expression of each of the plurality of markers in non-cancerous samples of the same type, either in a single reaction mixture (*i.e.* using reagents, such as different fluorescent probes, for each marker) or in individual reaction mixtures corresponding to one or more of the markers. In one embodiment, a significantly enhanced level of expression of more than one of the plurality of markers in the sample, relative to the corresponding normal levels, is an indication that the patient is afflicted with cervical cancer. When a plurality of markers is used, it is preferred that 2, 3, 4, 5, 8, 10, 12, 15, 20, 30, or 50 or more individual markers be used, wherein fewer markers are preferred.

In order to maximize the sensitivity of the compositions, kits, and methods of the invention (*i.e.* by interference attributable to cells of non-cervical origin in a patient sample), it is preferable that the marker of the invention used therein be a marker which has a restricted tissue distribution, *e.g.*, normally not expressed in non-cervical tissue.

Only a small number of markers are known to be associated with cervical cancers (*e.g.* bcl-2, 15A8 antigen, cdc6, Mcm5, and EGFR). These markers are not, of course, included among the markers of the invention, although they may be used together with one or more markers of the invention in a panel of markers, for example. It is well known that certain types of genes, such as oncogenes, tumor suppressor genes, growth factor-like genes, protease-like genes, and protein kinase-like genes are often involved with development of cancers of various types. Thus, among the markers of the invention, use of those which correspond to proteins which resemble known proteins encoded by known oncogenes and tumor suppressor genes, and those which correspond to proteins which resemble growth factors, proteases, and protein kinases are preferred.

Known oncogenes and tumor suppressor genes include, for example, *abl, abr, akt2, apc, bcl2α, bcl2β, bcl3, bcr, brca1, brca2, cbl, ccnd1, cdc42, cdk4, crk- II, csf1r/fms, dbl, dcc, dpc4/smad4, e-cad, e2f1/rbap, egfr/erbb-1, elk1, elk3, eph, erg, ets1, ets2, fer, fgr/src2, fli1/ergb2, fos, fps/fes, fra1, fra2, fyn, hck, hek, her2/erbb- 2/neu, her3/erbb-3, her4/erbb-4, hras1, hst2, hstf1, igfbp2, ink4a, ink4b, int2/fgf3, jun, junb, jund, kip2, kit, kras2a, kras2b, lck, lyn, mas, max, mcc, mdm2, met, mlh1, mmp10, mos, msh2, msh3, msh6, myb, myba, mybb, myc, mycl1, mycn, nf1, nf2, nme2, nras, p53, pdgfb, phb, pim1, pms1, pms2, ptc, pten, raf1, rap1a, rb1, rel, ret, ros1, ski, src1, tal1, tgfbr2, tgfb3, tgfbr3, thra1, thrb, tiam1, timp3, tjp1, tp53, trk, vav, vhl, vil2, waf1, wnt1, wnt2, wt1*, and *yes1* (Hesketh, 1997, In: *The Oncogene and Tumour Suppressor Gene Facts Book*, 2nd Ed., Academic Press; Fishel *et al.*, 1994, *Science* 266:1403-1405).

Known growth factors include platelet-derived growth factor alpha, platelet-derived growth factor beta (simian sarcoma viral {v-sis} oncogene homolog), thrombopoietin (myeloproliferative leukemia virus oncogene ligand, megakaryocyte growth and development factor), erythropoietin, B cell growth factor, macrophage stimulating factor 1 (hepatocyte growth factor-like protein), hepatocyte growth factor (hepapoietin A), insulin-like growth factor 1 (somatomedia C), hepatoma-derived growth factor, amphiregulin (schwannoma-derived growth factor), bone morphogenetic proteins 1, 2, 3, 3 beta, and 4, bone morphogenetic protein 7 (osteogenic protein 1), bone morphogenetic protein 8 (osteogenic protein 2), connective tissue growth factor, connective tissue activation peptide 3, epidermal growth factor (EGF), teratocarcinoma-derived growth factor 1, endothelin, endothelin 2, endothelin 3, stromal cell-derived factor 1, vascular endothelial growth factor (VEGF), VEGF-B, VEGF-C, placental growth factor (vascular endothelial growth factor-related protein), transforming growth factor alpha, transforming growth factor beta 1 and its precursors, transforming growth factor beta 2 and its precursors, fibroblast growth factor 1 (acidic), fibroblast growth factor 2 (basic), fibroblast growth factor 5 and its precursors, fibroblast growth factor 6 and its precursors, fibroblast growth factor 7 (keratinocyte growth factor), fibroblast growth factor 8 (androgen-induced), fibroblast growth factor 9 (glia-activating factor), pleiotrophin (heparin binding growth factor 8, neurite growth-promoting factor 1), brain-derived neurotrophic factor, and recombinant glial growth factor 2.

Known proteases include interleukin-1 beta convertase and its precursors, Mch6 and its precursors, Mch2 isoform alpha, Mch4, Cpp32 isoform alpha, Lice2 gamma cysteine protease, Ich-1S, Ich-1L, Ich-2 and its precursors, TY protease, matrix metalloproteinase 1 (interstitial collagenase), matrix metalloproteinase 2 (gelatinase A, 72kD gelatinase, 72kD type IV collagenase), matrix metalloproteinase 7 (matrilysin), matrix metalloproteinase 8 (neutrophil collagenase), matrix metalloproteinase 12

(macrophage elastase), matrix metalloproteinase 13 (collagenase 3), metallopeptidase 1, cysteine-rich metalloprotease (disintegrin) and its precursors, subtilisin-like protease Pc8 and its precursors, chymotrypsin, snake venom-like protease, cathepsin l, cathepsin D (lysosomal aspartyl protease), stromelysin, aminopeptidase N, plasminogen, tissue plasminogen activator, plasminogen activator inhibitor type II, and urokinase-type plasminogen activator.

Known protein kinases include DAP kinase, serine/threonine protein kinases NIK, PK428, Krs-2, SAK, and EMK, interferon-inducible double stranded RNA dependent protein kinase, FAST kinase, AIM1, IPL1-like midbody-associated protein kinase-1, NIMA-like protein kinase 1 (NLK1), the cyclin-dependent kinases (cdk1-10), checkpoint kinase Chk1, Nek3 protein kinase, BMK1 beta kinase, Clk1, Clk2, Clk3, extracellular signal-regulated kinases 1, 3, and 6, cdc28 protein kinase 1, cdc28 protein kinase 2, pLK, Myt1, c-Jun N-terminal kinase 2, Cam kinase 1, the MAP kinases, insulin-stimulated protein kinase 1, beta-adrenergic receptor kinase 2, ribosomal protein S6 kinase, kinase suppressor of ras-1 (KSR1), putative serine/threonine protein kinase Prk, PkB kinase, cAMP-dependent protein kinase, cGMP-dependent protein kinase, type II cGMP-dependent protein kinase, protein kinases Dyrk2, Dyrk3, and Dyrk4, Rho-associated coiled-coil containing protein kinase p160ROCK, protein tyrosine kinase t-Ror1, Ste20-related kinases, cell adhesion kinase beta, protein kinase 3, stress-activated protein kinase 4, protein kinase Zpk, serine kinase hPAK65, dual specificity mitogen-activated protein kinases 1 and 2, casein kinase I gamma 2, p21-activated protein kinase Pak1, lipid-activated protein kinase PRK2, focal adhesion kinase, dual-specificity tyrosine-phosphorylation regulated kinase, myosin light chain kinase, serine kinases SRPK2, TESK1, and VRK2, B lymphocyte serine/threonine protein kinase, stress-activated protein kinases JNK1 and JNK2, phosphorylase kinase, protein tyrosine kinase Tec, Jak2 kinase, protein kinase Ndr, MEK kinase 3, SHB adaptor protein (a Src homology 2 protein), agammaglobulinaemia protein-tyrosine kinase (Atk), protein kinase ATR, guanylate kinase 1, thrombopoeitin receptor and its precursors, DAG kinase epsilon, and kinases encoded by oncogenes or viral oncogenes such as v-fgr (Gardner-Rasheed), v-abl (Abelson murine leukemia viral oncogene homolog 1), v-arg (Abelson murine leukemia viral oncogene homolog, Abelson-related gene), v-fes and v-fps (feline sarcoma viral oncogene and Fujinami avian sarcoma viral oncogene homologs), proto-oncogene c-*cot*, oncogene *pim*-1, and oncogene *mas1*.

It is recognized that the compositions, kits, and methods of the invention will be of particular utility to patients having an enhanced risk of developing cervical cancer and their medical advisors. Patients recognized as having an enhanced risk of developing cervical cancer include, for example, patients having a familial history of

cervical cancer, patients identified as having a mutant oncogene (*i.e.* at least one allele), and patients determined through any other established medical criteria to be at risk for cancer or other malignancy.

The level of expression of a marker in normal (*i.e.* non-cancerous) human cervical tissue can be assessed in a variety of ways. In one embodiment, this normal level of expression is assessed by assessing the level of expression of the marker in a portion of cervical cells which appears to be non-cancerous and by comparing this normal level of expression with the level of expression in a portion of the cervical cells which is suspected of being cancerous. For example, the normal level of expression of a marker may be assessed using a non-affected portion of the cervix and this normal level of expression may be compared with the level of expression of the same marker in an affected portion of the cervix. Alternately, and particularly as further information becomes available as a result of routine performance of the methods described herein, population-average values for normal expression of the markers of the invention may be used. In other embodiments, the 'normal' level of expression of a marker may be determined by assessing expression of the marker in a patient sample obtained from a non-cancer-afflicted patient, from a patient sample obtained from a patient before the suspected onset of cervical cancer in the patient, from archived patient samples, and the like.

The invention includes compositions, kits, and methods for assessing the presence of cervical cancer cells in a sample (*e.g.* an archived tissue sample or a sample obtained from a patient). These compositions, kits, and methods are substantially the same as those described above, except that, where necessary, the compositions, kits, and methods are adapted for use with samples other than patient samples. For example, when the sample to be used is a parafinized, archived human tissue sample, it can be necessary to adjust the ratio of compounds in the compositions of the invention, in the kits of the invention, or the methods used to assess levels of marker expression in the sample. Such methods are well known in the art and within the skill of the ordinary artisan.

The invention includes a kit for assessing the presence of cervical cancer cells (*e.g.* in a sample such as a patient sample). The kit comprises a plurality of reagents, each of which is capable of binding specifically with a nucleic acid or polypeptide corresponding to a marker of the invention. Suitable reagents for binding with a polypeptide corresponding to a marker of the invention include antibodies, antibody derivatives, antibody fragments, and the like. Suitable reagents for binding with a nucleic acid (*e.g.* a genomic DNA, an mRNA, a spliced mRNA, a cDNA, or the like) include complementary nucleic acids. For example, the nucleic acid reagents may

include oligonucleotides (labeled or non-labeled) fixed to a substrate, labeled oligonucleotides not bound with a substrate, pairs of PCR primers, molecular beacon probes, and the like.

The kit of the invention may optionally comprise additional components useful for performing the methods of the invention. By way of example, the kit may comprise fluids (*e.g.* SSC buffer) suitable for annealing complementary nucleic acids or for binding an antibody with a protein with which it specifically binds, one or more sample compartments, an instructional material which describes performance of a method of the invention, a sample of normal cervical cells, a sample of cervical cancer cells, and the like.

The invention also includes a method of making an isolated hybridoma which produces an antibody useful for assessing whether a patient is afflicted with cervical cancer. In this method, a protein or protein fragment corresponding to a marker of the invention is isolated (*e.g.* by purification from a cell in which it is expressed or by transcription and translation of a nucleic acid encoding the protein *in vivo* or *in vitro* using known methods). A vertebrate, preferably a mammal such as a mouse, rat, rabbit, or sheep, is immunized using the isolated protein or protein fragment. The vertebrate may optionally (and preferably) be immunized at least one additional time with the isolated protein or protein fragment, so that the vertebrate exhibits a robust immune response to the protein or protein fragment. Splenocytes are isolated from the immunized vertebrate and fused with an immortalized cell line to form hybridomas, using any of a variety of methods well known in the art. Hybridomas formed in this manner are then screened using standard methods to identify one or more hybridomas which produce an antibody which specifically binds with the protein or protein fragment. The invention also includes hybridomas made by this method and antibodies made using such hybridomas.

The invention also includes a method of assessing the efficacy of a test compound for inhibiting cervical cancer cells. As described above, differences in the level of expression of the markers of the invention correlate with the cancerous state of cervical cells. Although it is recognized that changes in the levels of expression of certain of the markers of the invention likely result from the cancerous state of cervical cells, it is likewise recognized that changes in the levels of expression of other of the markers of the invention induce, maintain, and promote the cancerous state of those cells. Thus, compounds which inhibit cervical cancer in a patient will cause the level of expression of one or more of the markers of the invention to change to a level nearer the normal level of expression for that marker (*i.e.* the level of expression for the marker in non-cancerous cervical cells).

This method thus comprises comparing expression of a marker in a first cervical cell sample and maintained in the presence of the test compound and expression of the marker in a second cervical cell sample and maintained in the absence of the test compound. A significant decrease in the level of expression of a marker listed within Tables 1-13 is an indication that the test compound inhibits cervical cancer. The cervical cell samples may, for example, be aliquots of a single sample of normal cervical cells obtained from a patient, pooled samples of normal cervical cells obtained from a patient, cells of a normal cervical cell line, aliquots of a single sample of cervical cancer cells obtained from a patient, pooled samples of cervical cancer cells obtained from a patient, cells of a cervical cancer cell line, or the like. In one embodiment, the samples are cervical cancer cells obtained from a patient and a plurality of compounds known to be effective for inhibiting various cervical cancers are tested in order to identify the compound which is likely to best inhibit the cervical cancer in the patient.

This method may likewise be used to assess the efficacy of a therapy for inhibiting cervical cancer in a patient. In this method, the level of expression of one or more markers of the invention in a pair of samples (one subjected to the therapy, the other not subjected to the therapy) is assessed. As with the method of assessing the efficacy of test compounds, if the therapy induces a significant decrease in the level of expression of a marker listed within Tables 1-13, or blocks induction of a marker listed within Tables 1-13, then the therapy is efficacious for inhibiting cervical cancer. As above, if samples from a selected patient are used in this method, then alternative therapies can be assessed *in vitro* in order to select a therapy most likely to be efficacious for inhibiting cervical cancer in the patient.

As described herein, cervical cancer in patients is associated with an increase in the level of expression of one or more markers listed within Tables 1-13. While, as discussed above, some of these changes in expression level result from occurrence of the cervical cancer, others of these changes induce, maintain, and promote the cancerous state of cervical cancer cells. Thus, cervical cancer characterized by an increase in the level of expression of one or more markers listed within Tables 1-13 can be controlled or suppressed by inhibiting expression of those markers.

Expression of a marker listed within Tables 1-13 can be inhibited in a number of ways generally known in the art. For example, an antisense oligonucleotide can be provided to the cervical cancer cells in order to inhibit transcription, translation, or both, of the marker(s). Alternately, a polynucleotide encoding an antibody, an antibody derivative, or an antibody fragment, and operably linked with an appropriate promoter/regulator region, can be provided to the cell in order to generate intracellular antibodies which will inhibit the function or activity of the protein corresponding to the

marker(s). Using the methods described herein, a variety of molecules, particularly including molecules sufficiently small that they are able to cross the cell membrane, can be screened in order to identify molecules which inhibit expression of the marker(s). The compound so identified can be provided to the patient in order to inhibit expression of the marker(s) in the cervical cancer cells of the patient.

As described above, the cancerous state of human cervical cells is correlated with changes in the levels of expression of the markers of the invention. Thus, compounds which induce increased expression of one or more of the markers listed in within Tables 1-13 can induce cervical cell carcinogenesis. The invention thus includes a method for assessing the human cervical cell carcinogenic potential of a test compound. This method comprises maintaining separate aliquots of human cervical cells in the presence and absence of the test compound. Expression of a marker of the invention in each of the aliquots is compared. A significant increase in the level of expression of a marker listed within Tables 1-13 in the aliquot maintained in the presence of the test compound (relative to the aliquot maintained in the absence of the test compound) is an indication that the test compound possesses human cervical cell carcinogenic potential. The relative carcinogenic potentials of various test compounds can be assessed by comparing the degree of enhancement or inhibition of the level of expression of the relevant markers, by comparing the number of markers for which the level of expression is enhanced or inhibited, or by comparing both.

Various aspects of the invention are described in further detail in the following subsections.

I. Isolated Nucleic Acid Molecules

One aspect of the invention pertains to isolated nucleic acid molecules that correspond to a marker of the invention, including nucleic acids which encode a polypeptide corresponding to a marker of the invention or a portion of such a polypeptide. Isolated nucleic acids of the invention also include nucleic acid molecules sufficient for use as hybridization probes to identify nucleic acid molecules that correspond to a marker of the invention, including nucleic acids which encode a polypeptide corresponding to a marker of the invention, and fragments of such nucleic acid molecules, *e.g.*, those suitable for use as PCR primers for the amplification or mutation of nucleic acid molecules. As used herein, the term "nucleic acid molecule" is intended to include DNA molecules (*e.g.*, cDNA or genomic DNA) and RNA molecules (*e.g.*, mRNA) and analogs of the DNA or RNA generated using nucleotide analogs. The nucleic acid molecule can be single-stranded or double-stranded, but preferably is double-stranded DNA.

An "isolated" nucleic acid molecule is one which is separated from other nucleic acid molecules which are present in the natural source of the nucleic acid molecule. Preferably, an "isolated" nucleic acid molecule is free of sequences (preferably protein-encoding sequences) which naturally flank the nucleic acid (*i.e.*, sequences located at the 5' and 3' ends of the nucleic acid) in the genomic DNA of the organism from which the nucleic acid is derived. For example, in various embodiments, the isolated nucleic acid molecule can contain less than about 5 kB, 4 kB, 3 kB, 2 kB, 1 kB, 0.5 kB or 0.1 kB of nucleotide sequences which naturally flank the nucleic acid molecule in genomic DNA of the cell from which the nucleic acid is derived. Moreover, an "isolated" nucleic acid molecule, such as a cDNA molecule, can be substantially free of other cellular material, or culture medium when produced by recombinant techniques, or substantially free of chemical precursors or other chemicals when chemically synthesized.

A nucleic acid molecule of the present invention, *e.g.*, a nucleic acid encoding a protein corresponding to a marker listed in one or more of Tables 1-13, can be isolated using standard molecular biology techniques and the sequence information in the database records described herein. Using all or a portion of such nucleic acid sequences, nucleic acid molecules of the invention can be isolated using standard hybridization and cloning techniques (*e.g.*, as described in Sambrook *et al.*, ed., *Molecular Cloning: A Laboratory Manual, 2nd ed.,* Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1989).

A process for identifying a larger fragment or the full-length coding sequence of a marker of the present invention is thus also provided. Any conventional recombinant DNA techniques applicable for isolating polynucleotides may be employed. One such method involves the 5'-RACE-PCR technique, in which the poly-A mRNA that contains the coding sequence of particular interest is first reverse transcribed with a 3'-primer comprising a sequence disclosed herein. The newly synthesized cDNA strand is then tagged with an anchor primer with a known sequence, which preferably contains a convenient cloning restriction site attached at the 5'end. The tagged cDNA is then amplified with the 3'-primer (or a nested primer sharing sequence homology to the internal sequences of the coding region) and the 5'-anchor primer. The amplification may be conducted under conditions of various levels of stringency to optimize the amplification specificity. 5'-RACE-PCR can be readily performed using commercial kits (available from, *e.g.*, BRL Life Technologies Inc., Clotech) according to the manufacturer's instructions.

Isolating the complete coding sequence of a gene can also be carried out in a hybridization assay using a suitable probe. The probe preferably comprises at least

10 nucleotides, and more preferably exhibits sequence homology to the polynucleotides of the markers of the present invention. Other high throughput screens for cDNAs, such as those involving gene chip technology, can also be employed in obtaining the complete cDNA sequence.

In addition, databases exist that reduce the complexity of ESTs by assembling contiguous EST sequences into tentative genes. For example, TIGR has assembled human ESTs into a database called THC for tentative human consensus sequences. The THC database allows for a more definitive assignment compared to ESTs alone. Software programs exist (TIGR assembler and TIGEM EST assembly machine and contig assembly program (see Huang, X . , 1996, *Genomes* 33:21-23)) that allow for assembling ESTs into contiguous sequences from any organism.

Alternatively, mRNA from a sample preparation is used to construct cDNA library in the ZAP Express vector following the procedure described in Velculescu *et al.*, 1997, *Science* 270:484. The ZAP Express cDNA synthesis kit (Stratagene) is used accordingly to the manufacturer's protocol. Plates containing 250 to 2000 plaques are hybridized as described in Rupert *et al.*, 1988, *Mol. Cell. Bio.* 8:3104 to oligonucleotide probes with the same conditions previously described for standard probes except that the hybridization temperature is reduced to a room temperature. Washes are performed in 6X standard-saline-citrate 0.1% SDS for 30 minutes at room temperature. The probes are labeled with ^{32}P-ATP trough use of T4 polynucleotide kinase.

A partial cDNA (3' fragment) can be isolated by 3' directed PCR reaction. This procedure is a modification of the protocol described in Polyak *et al.*, 1997, *Nature* 389:300. Briefly, the procedure uses SAGE tags in PCR reaction such that the resultant PCR product contains the SAGE tag of interest as well as additional cDNA, the length of which is defined by the position of the tag with respect to the 3' end of the cDNA. The cDNA product derived from such a transcript driven PCR reaction can be used for many applications.

RNA from a source to express the cDNA corresponding to a given tag is first converted to double-stranded cDNA using any standard cDNA protocol. Similar conditions used to generate cDNA for SAGE library construction can be employed except that a modified oligo-dT primer is used to derive the first strand synthesis. For example, the oligonucleotide of composition 5'-B-TCC GGC GCG CCG TTT TCC CAG TCA CGA(30)-3', contains a poly-T stretch at the 3' end for hybridization and priming from poly-A tails, an M13 priming site for use in subsequent PCR steps, a 5' Biotin label (B) for capture to strepavidin-coated magnetic beads, and an AscI restriction endonuclease site for releasing the cDNA from the strepavidin-coated magnetic beads.

Theoretically, any sufficiently-sized DNA region capable of hybridizing to a PCR primer can be used as well as any other 8 base pair recognizing endonuclease.

cDNA constructed utilizing this or similar modified oligo-dT primer is then processed as described in U.S. Patent No. 5,695,937 up until adapter ligation where only one adapter is ligated to the cDNA pool. After adapter ligation, the cDNA is released from the streptavidin-coated magnetic beads and is then used as a template for cDNA amplification.

Various PCR protocols can be employed using PCR priming sites within the 3' modified oligo-dT primer and the SAGE tag. The SAGE tag-derived PCR primer employed can be of varying length dictated by 5' extension of the tag into the adaptor sequence. cDNA products are now available for a variety of applications.

This technique can be further modified by: (1) altering the length and/or content of the modified oligo-dT primer; (2) ligating adaptors other than that previously employed within the SAGE protocol; (3) performing PCR from template retained on the streptavidin-coated magnetic beads; and (4) priming first strand cDNA synthesis with non-oligo-dT based primers.

Gene trapper technology can also be used. The reagents and manufacturer's instructions for this technology are commercially available from Life Technologies, Inc., Gaithsburg, Maryland. Briefly, a complex population of single-stranded phagemid DNA containing directional cDNA inserts is enriched for the target sequence by hybridization in solution to a biotinylated oligonucleotide probe complementary to the target sequence. The hybrids are captured on streptavidin-coated paramagnetic beads. A magnet retrieves the paramagnetic beads from the solution, leaving nonhybridized single-stranded DNAs behind. Subsequently, the captured single-stranded DNA target is released from the biotinylated oligonucleotide. After release, the cDNA clone is further enriched by using a nonbiotinylated target oligonucleotide to specifically prime conversion of the single-stranded DNA. Following transformation and plating, typically 20% to 100% of the colonies represent the cDNA clone of interest. To identify the desired cDNA clone, the colonies may be screened by colony hybridization using the ^{32}P-labeled oligonucleotide, or alternatively by DNA sequencing and alignment of all sequences obtained from numerous clones to determine a consensus sequence.

A nucleic acid molecule of the invention can be amplified using cDNA, mRNA, or genomic DNA as a template and appropriate oligonucleotide primers according to standard PCR amplification techniques. The nucleic acid so amplified can be cloned into an appropriate vector and characterized by DNA sequence analysis. Furthermore, oligonucleotides corresponding to all or a portion of a nucleic acid

molecule of the invention can be prepared by standard synthetic techniques, *e.g.*, using an automated DNA synthesizer.

In another preferred embodiment, an isolated nucleic acid molecule of the invention comprises a nucleic acid molecule which has a nucleotide sequence complementary to the nucleotide sequence of a nucleic acid corresponding to a marker of the invention or to the nucleotide sequence of a nucleic acid encoding a protein which corresponds to a marker of the invention. A nucleic acid molecule which is complementary to a given nucleotide sequence is one which is sufficiently complementary to the given nucleotide sequence that it can hybridize to the given nucleotide sequence thereby forming a stable duplex.

Moreover, a nucleic acid molecule of the invention can comprise only a portion of a nucleic acid sequence, wherein the full length nucleic acid sequence comprises a marker of the invention or which encodes a polypeptide corresponding to a marker of the invention. Such nucleic acids can be used, for example, as a probe or primer. The probe/primer typically is used as one or more substantially purified oligonucleotides. The oligonucleotide typically comprises a region of nucleotide sequence that hybridizes under stringent conditions to at least about 7, preferably about 15, more preferably about 25, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, or 400 or more consecutive nucleotides of a nucleic acid of the invention.

Probes based on the sequence of a nucleic acid molecule of the invention can be used to detect transcripts or genomic sequences corresponding to one or more markers of the invention. The probe comprises a label group attached thereto, *e.g.*, a radioisotope, a fluorescent compound, an enzyme, or an enzyme co-factor. Such probes can be used as part of a diagnostic test kit for identifying cells or tissues which mis-express the protein, such as by measuring levels of a nucleic acid molecule encoding the protein in a sample of cells from a subject, *e.g.*, detecting mRNA levels or determining whether a gene encoding the protein has been mutated or deleted.

The invention further encompasses nucleic acid molecules that differ, due to degeneracy of the genetic code, from the nucleotide sequence of nucleic acids encoding a protein which corresponds to a marker of the invention, and thus encode the same protein.

In addition to the nucleotide sequences described in the GenBank and IMAGE Consortium database records described herein, it will be appreciated by those skilled in the art that DNA sequence polymorphisms that lead to changes in the amino acid sequence can exist within a population (*e.g.*, the human population). Such genetic polymorphisms can exist among individuals within a population due to natural allelic variation. An allele is one of a group of genes which occur alternatively at a given

occur alternatively at a given genetic locus. In addition, it will be appreciated that DNA polymorphisms that affect RNA expression levels can also exist that may affect the overall expression level of that gene (*e.g.*, by affecting regulation or degradation).

As used herein, the phrase "allelic variant" refers to a nucleotide sequence which occurs at a given locus or to a polypeptide encoded by the nucleotide sequence.

As used herein, the terms "gene" and "recombinant gene" refer to nucleic acid molecules comprising an open reading frame encoding a polypeptide corresponding to a marker of the invention. Such natural allelic variations can typically result in 0.1-0.5% variance in the nucleotide sequence of a given gene. Alternative alleles can be identified by sequencing the gene of interest in a number of different individuals. This can be readily carried out by using hybridization probes to identify the same genetic locus in a variety of individuals. Any and all such nucleotide variations and resulting amino acid polymorphisms or variations that are the result of natural allelic variation and that do not alter the functional activity are intended to be within the scope of the invention.

In another embodiment, an isolated nucleic acid molecule of the invention is at least 7, 15, 20, 25, 30, 40, 60, 80, 100, 150, 200, 250, 300, 350, 400, 450, 550, 650, 700, 800, 900, 1000, 1200, 1400, 1600, 1800, 2000, 2200, 2400, 2600, 2800, 3000, 3500, 4000, 4500, or more nucleotides in length and hybridizes under stringent conditions to a nucleic acid corresponding to a marker of the invention or to a nucleic acid encoding a protein corresponding to a marker of the invention. As used herein, the term "hybridizes under stringent conditions" is intended to describe conditions for hybridization and washing under which nucleotide sequences at least 75% (80%, 85%, preferably 90%) identical to each other typically remain hybridized to each other. Such stringent conditions are known to those skilled in the art and can be found in sections 6.3.1-6.3.6 of *Current Protocols in Molecular Biology*, John Wiley & Sons, N.Y. (1989). A preferred, non-limiting example of stringent hybridization conditions for annealing two single-stranded DNA each of which is at least about 100 bases in length and/or for annealing a single-stranded DNA and a single-stranded RNA each of which is at least about 100 bases in length, are hybridization in 6X sodium chloride/sodium citrate (SSC) at about 45°C, followed by one or more washes in 0.2X SSC, 0.1% SDS at 50-65°C. Further preferred hybridization conditions are taught in Lockhart, *et al.*, Nature Biotechnology, Volume 14, 1996 August:1675-1680; Breslauer, *et al.*, Proc. Natl. Acad. Sci. USA, Volume 83, 1986 June: 3746-3750; Van Ness, *et al.*, Nucleic Acids Research, Volume 19, No. 19, 1991 September: 5143-5151; McGraw, *et al.*, BioTechniques, Volume 8, No. 6 1990: 674-678; and Milner, *et al.*, Nature

Biotechnology, Volume 15, 1997 June: 537-541, all expressly incorporated by reference.

In addition to naturally-occurring allelic variants of a nucleic acid molecule of the invention that can exist in the population, the skilled artisan will further appreciate that sequence changes can be introduced by mutation thereby leading to changes in the amino acid sequence of the encoded protein, without altering the biological activity of the protein encoded thereby. For example, one can make nucleotide substitutions leading to amino acid substitutions at "non-essential" amino acid residues. A "non-essential" amino acid residue is a residue that can be altered from the wild-type sequence without altering the biological activity, whereas an "essential" amino acid residue is required for biological activity. For example, amino acid residues that are not conserved or only semi-conserved among homologs of various species may be non-essential for activity and thus would be likely targets for alteration. Alternatively, amino acid residues that are conserved among the homologs of various species (*e.g.*, murine and human) may be essential for activity and thus would not be likely targets for alteration.

Accordingly, another aspect of the invention pertains to nucleic acid molecules encoding a polypeptide of the invention that contain changes in amino acid residues that are not essential for activity. Such polypeptides differ in amino acid sequence from the naturally-occurring proteins which correspond to the markers of the invention, yet retain biological activity. In one embodiment, such a protein has an amino acid sequence that is at least about 40% identical, 50%, 60%, 70%, 80%, 90%, 95%, or 98% identical to the amino acid sequence of one of the proteins which correspond to the markers of the invention.

An isolated nucleic acid molecule encoding a variant protein can be created by introducing one or more nucleotide substitutions, additions or deletions into the nucleotide sequence of nucleic acids of the invention, such that one or more amino acid residue substitutions, additions, or deletions are introduced into the encoded protein. Mutations can be introduced by standard techniques, such as site-directed mutagenesis and PCR-mediated mutagenesis. Preferably, conservative amino acid substitutions are made at one or more predicted non-essential amino acid residues. A "conservative amino acid substitution" is one in which the amino acid residue is replaced with an amino acid residue having a similar side chain. Families of amino acid residues having similar side chains have been defined in the art. These families include amino acids with basic side chains (*e.g.*, lysine, arginine, histidine), acidic side chains (*e.g.*, aspartic acid, glutamic acid), uncharged polar side chains (*e.g.*, glycine, asparagine, glutamine, serine, threonine, tyrosine, cysteine), non-polar side chains (*e.g.*,

alanine, valine, leucine, isoleucine, proline, phenylalanine, methionine, tryptophan), beta-branched side chains (*e.g.*, threonine, valine, isoleucine) and aromatic side chains (*e.g.*, tyrosine, phenylalanine, tryptophan, histidine). Alternatively, mutations can be introduced randomly along all or part of the coding sequence, such as by saturation mutagenesis, and the resultant mutants can be screened for biological activity to identify mutants that retain activity. Following mutagenesis, the encoded protein can be expressed recombinantly and the activity of the protein can be determined.

The present invention encompasses antisense nucleic acid molecules, *i.e.*, molecules which are complementary to a sense nucleic acid of the invention, *e.g.*, complementary to the coding strand of a double-stranded cDNA molecule corresponding to a marker of the invention or complementary to an mRNA sequence corresponding to a marker of the invention. Accordingly, an antisense nucleic acid of the invention can hydrogen bond to (*i.e.* anneal with) a sense nucleic acid of the invention. The antisense nucleic acid can be complementary to an entire coding strand, or to only a portion thereof, *e.g.*, all or part of the protein coding region (or open reading frame). An antisense nucleic acid molecule can also be antisense to all or part of a non-coding region of the coding strand of a nucleotide sequence encoding a polypeptide of the invention. The non-coding regions ("5' and 3' untranslated regions") are the 5' and 3' sequences which flank the coding region and are not translated into amino acids.

An antisense oligonucleotide can be, for example, about 5, 10, 15, 20, 25, 30, 35, 40, 45, or 50 or more nucleotides in length. An antisense nucleic acid of the invention can be constructed using chemical synthesis and enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid (*e.g.*, an antisense oligonucleotide) can be chemically synthesized using naturally occurring nucleotides or variously modified nucleotides designed to increase the biological stability of the molecules or to increase the physical stability of the duplex formed between the antisense and sense nucleic acids, *e.g.*, phosphorothioate derivatives and acridine substituted nucleotides can be used. Examples of modified nucleotides which can be used to generate the antisense nucleic acid include 5-fluorouracil, 5-bromouracil, 5-chlorouracil, 5-iodouracil, hypoxanthine, xanthine, 4-acetylcytosine, 5-(carboxyhydroxylmethyl) uracil, 5-carboxymethylaminomethyl-2-thiouridine, 5-carboxymethylaminomethyluracil, dihydrouracil, beta-D-galactosylqueosine, inosine, N6-isopentenyladenine, 1-methylguanine, 1-methylinosine, 2,2-dimethylguanine, 2-methyladenine, 2-methylguanine, 3-methylcytosine, 5-methylcytosine, N6-adenine, 7-methylguanine, 5-methylaminomethyluracil, 5-methoxyaminomethyl-2-thiouracil, beta-D-mannosylqueosine, 5'-methoxycarboxymethyluracil, 5-methoxyuracil, 2-methylthio-N6-isopentenyladenine, uracil-5-oxyacetic acid (v), wybutoxosine, pseudouracil,

queosine, 2-thiocytosine, 5-methyl-2-thiouracil, 2-thiouracil, 4-thiouracil, 5-methyluracil, uracil-5-oxyacetic acid methylester, uracil-5-oxyacetic acid (v), 5-methyl-2-thiouracil, 3-(3-amino-3-N-2-carboxypropyl) uracil, (acp3)w, and 2,6-diaminopurine. Alternatively, the antisense nucleic acid can be produced biologically using an expression vector into which a nucleic acid has been sub-cloned in an antisense orientation (*i.e.*, RNA transcribed from the inserted nucleic acid will be of an antisense orientation to a target nucleic acid of interest, described further in the following subsection).

The antisense nucleic acid molecules of the invention are typically administered to a subject or generated *in situ* such that they hybridize with or bind to cellular mRNA and/or genomic DNA encoding a polypeptide corresponding to a selected marker of the invention to thereby inhibit expression of the marker, *e.g.*, by inhibiting transcription and/or translation. The hybridization can be by conventional nucleotide complementarity to form a stable duplex, or, for example, in the case of an antisense nucleic acid molecule which binds to DNA duplexes, through specific interactions in the major groove of the double helix. Examples of a route of administration of antisense nucleic acid molecules of the invention includes direct injection at a tissue site or infusion of the antisense nucleic acid into a cervix-associated body fluid. Alternatively, antisense nucleic acid molecules can be modified to target selected cells and then administered systemically. For example, for systemic administration, antisense molecules can be modified such that they specifically bind to receptors or antigens expressed on a selected cell surface, *e.g.*, by linking the antisense nucleic acid molecules to peptides or antibodies which bind to cell surface receptors or antigens. The antisense nucleic acid molecules can also be delivered to cells using the vectors described herein. To achieve sufficient intracellular concentrations of the antisense molecules, vector constructs in which the antisense nucleic acid molecule is placed under the control of a strong pol II or pol III promoter are preferred.

An antisense nucleic acid molecule of the invention can be an α-anomeric nucleic acid molecule. An α-anomeric nucleic acid molecule forms specific double-stranded hybrids with complementary RNA in which, contrary to the usual α-units, the strands run parallel to each other (Gaultier *et al.,* 1987, *Nucleic Acids Res.* 15:6625-6641). The antisense nucleic acid molecule can also comprise a 2'-o-methylribonucleotide (Inoue *et al.,* 1987, *Nucleic Acids Res.* 15:6131-6148) or a chimeric RNA-DNA analogue (Inoue *et al.,* 1987, *FEBS Lett.* 215:327-330).

The invention also encompasses ribozymes. Ribozymes are catalytic RNA molecules with ribonuclease activity which are capable of cleaving a single-stranded nucleic acid, such as an mRNA, to which they have a complementary region.

Thus, ribozymes (*e.g.*, hammerhead ribozymes as described in Haselhoff and Gerlach, 1988, *Nature* 334:585-591) can be used to catalytically cleave mRNA transcripts to thereby inhibit translation of the protein encoded by the mRNA. A ribozyme having specificity for a nucleic acid molecule encoding a polypeptide corresponding to a marker of the invention can be designed based upon the nucleotide sequence of a cDNA corresponding to the marker. For example, a derivative of a *Tetrahymena* L-19 IVS RNA can be constructed in which the nucleotide sequence of the active site is complementary to the nucleotide sequence to be cleaved (see Cech *et al.* U.S. Patent No. 4,987,071; and Cech *et al.* U.S. Patent No. 5,116,742). Alternatively, an mRNA encoding a polypeptide of the invention can be used to select a catalytic RNA having a specific ribonuclease activity from a pool of RNA molecules (see, *e.g.*, Bartel and Szostak, 1993, *Science* 261:1411-1418).

The invention also encompasses nucleic acid molecules which form triple helical structures. For example, expression of a polypeptide of the invention can be inhibited by targeting nucleotide sequences complementary to the regulatory region of the gene encoding the polypeptide (*e.g.*, the promoter and/or enhancer) to form triple helical structures that prevent transcription of the gene in target cells. See generally Helene (1991) *Anticancer Drug Des.* 6(6):569-84; Helene (1992) *Ann. N.Y. Acad. Sci.* 660:27-36; and Maher (1992) *Bioassays* 14(12):807-15.

In various embodiments, the nucleic acid molecules of the invention can be modified at the base moiety, sugar moiety or phosphate backbone to improve, *e.g.*, the stability, hybridization, or solubility of the molecule. For example, the deoxyribose phosphate backbone of the nucleic acids can be modified to generate peptide nucleic acids (see Hyrup *et al.,* 1996, *Bioorganic & Medicinal Chemistry* 4(1): 5-23). As used herein, the terms "peptide nucleic acids" or "PNAs" refer to nucleic acid mimics, *e.g.*, DNA mimics, in which the deoxyribose phosphate backbone is replaced by a pseudopeptide backbone and only the four natural nucleobases are retained. The neutral backbone of PNAs has been shown to allow for specific hybridization to DNA and RNA under conditions of low ionic strength. The synthesis of PNA oligomers can be performed using standard solid phase peptide synthesis protocols as described in Hyrup *et al.* (1996), *supra*; Perry-O'Keefe *et al.* (1996) *Proc. Natl. Acad. Sci. USA* 93:14670-675.

PNAs can be used in therapeutic and diagnostic applications. For example, PNAs can be used as antisense or antigene agents for sequence-specific modulation of gene expression by, *e.g.*, inducing transcription or translation arrest or inhibiting replication. PNAs can also be used, *e.g.*, in the analysis of single base pair mutations in a gene by, *e.g.*, PNA directed PCR clamping; as artificial restriction

enzymes when used in combination with other enzymes, *e.g.*, S1 nucleases (Hyrup (1996), *supra*; or as probes or primers for DNA sequence and hybridization (Hyrup, 1996, *supra*; Perry-O'Keefe *et al.,* 1996, *Proc. Natl. Acad. Sci. USA* 93:14670-675).

In another embodiment, PNAs can be modified, *e.g.*, to enhance their stability or cellular uptake, by attaching lipophilic or other helper groups to PNA, by the formation of PNA-DNA chimeras, or by the use of liposomes or other techniques of drug delivery known in the art. For example, PNA-DNA chimeras can be generated which can combine the advantageous properties of PNA and DNA. Such chimeras allow DNA recognition enzymes, *e.g.*, RNASE H and DNA polymerases, to interact with the DNA portion while the PNA portion would provide high binding affinity and specificity. PNA-DNA chimeras can be linked using linkers of appropriate lengths selected in terms of base stacking, number of bonds between the nucleobases, and orientation (Hyrup, 1996, *supra*). The synthesis of PNA-DNA chimeras can be performed as described in Hyrup (1996), *supra,* and Finn *et al.* (1996) *Nucleic Acids Res.* 24(17):3357-63. For example, a DNA chain can be synthesized on a solid support using standard phosphoramidite coupling chemistry and modified nucleoside analogs. Compounds such as 5'-(4-methoxytrityl)amino-5'-deoxy-thymidine phosphoramidite can be used as a link between the PNA and the 5' end of DNA (Mag *et al.,* 1989, *Nucleic Acids Res.* 17:5973-88). PNA monomers are then coupled in a step-wise manner to produce a chimeric molecule with a 5' PNA segment and a 3' DNA segment (Finn *et al.,* 1996, *Nucleic Acids Res.* 24(17):3357-63). Alternatively, chimeric molecules can be synthesized with a 5' DNA segment and a 3' PNA segment (Peterser *et al.,* 1975, *Bioorganic Med. Chem. Lett.* 5:1119-11124).

In other embodiments, the oligonucleotide can include other appended groups such as peptides (*e.g.*, for targeting host cell receptors *in vivo*), or agents facilitating transport across the cell membrane (see, *e.g.*, Letsinger *et al.,* 1989, *Proc. Natl. Acad. Sci. USA* 86:6553-6556; Lemaitre *et al.,* 1987, *Proc. Natl. Acad. Sci. USA* 84:648-652; PCT Publication No. WO 88/09810) or the blood-brain barrier (see, *e.g.*, PCT Publication No. WO 89/10134). In addition, oligonucleotides can be modified with hybridization-triggered cleavage agents (see, *e.g.,* Krol *et al.,* 1988, *Bio/Techniques* 6:958-976) or intercalating agents (see, *e.g.,* Zon, 1988, *Pharm. Res.* 5:539-549). To this end, the oligonucleotide can be conjugated to another molecule, *e.g.*, a peptide, hybridization triggered cross-linking agent, transport agent, hybridization-triggered cleavage agent, etc.

The invention also includes molecular beacon nucleic acids having at least one region which is complementary to a nucleic acid of the invention, such that the molecular beacon is useful for quantitating the presence of the nucleic acid of the

invention in a sample. A "molecular beacon" nucleic acid is a nucleic acid comprising a pair of complementary regions and having a fluorophore and a fluorescent quencher associated therewith. The fluorophore and quencher are associated with different portions of the nucleic acid in such an orientation that when the complementary regions are annealed with one another, fluorescence of the fluorophore is quenched by the quencher. When the complementary regions of the nucleic acid are not annealed with one another, fluorescence of the fluorophore is quenched to a lesser degree. Molecular beacon nucleic acids are described, for example, in U.S. Patent 5,876,930.

II. Isolated Proteins and Antibodies

One aspect of the invention pertains to isolated proteins which correspond to individual markers of the invention, and biologically active portions thereof, as well as polypeptide fragments suitable for use as immunogens to raise antibodies directed against a polypeptide corresponding to a marker of the invention. In one embodiment, the native polypeptide corresponding to a marker can be isolated from cells or tissue sources by an appropriate purification scheme using standard protein purification techniques. In another embodiment, polypeptides corresponding to a marker of the invention are produced by recombinant DNA techniques. Alternative to recombinant expression, a polypeptide corresponding to a marker of the invention can be synthesized chemically using standard peptide synthesis techniques.

An "isolated" or "purified" protein or biologically active portion thereof is substantially free of cellular material or other contaminating proteins from the cell or tissue source from which the protein is derived, or substantially free of chemical precursors or other chemicals when chemically synthesized. The language "substantially free of cellular material" includes preparations of protein in which the protein is separated from cellular components of the cells from which it is isolated or recombinantly produced. Thus, protein that is substantially free of cellular material includes preparations of protein having less than about 30%, 20%, 10%, or 5% (by dry weight) of heterologous protein (also referred to herein as a "contaminating protein"). When the protein or biologically active portion thereof is recombinantly produced, it is also preferably substantially free of culture medium, *i.e.*, culture medium represents less than about 20%, 10%, or 5% of the volume of the protein preparation. When the protein is produced by chemical synthesis, it is preferably substantially free of chemical precursors or other chemicals, *i.e.*, it is separated from chemical precursors or other chemicals which are involved in the synthesis of the protein. Accordingly such preparations of the protein have less than about 30%, 20%, 10%, 5% (by dry weight) of chemical precursors or compounds other than the polypeptide of interest.

Biologically active portions of a polypeptide corresponding to a marker of the invention include polypeptides comprising amino acid sequences sufficiently identical to or derived from the amino acid sequence of the protein corresponding to the marker (*e.g.*, the amino acid sequence listed in the GenBank and IMAGE Consortium database records described herein), which include fewer amino acids than the full length protein, and exhibit at least one activity of the corresponding full-length protein. Typically, biologically active portions comprise a domain or motif with at least one activity of the corresponding protein. A biologically active portion of a protein of the invention can be a polypeptide which is, for example, 10, 25, 50, 100 or more amino acids in length. Moreover, other biologically active portions, in which other regions of the protein are deleted, can be prepared by recombinant techniques and evaluated for one or more of the functional activities of the native form of a polypeptide of the invention.

Preferred polypeptides have the amino acid sequence listed in the one of the GenBank and IMAGE Consortium database records described herein. Other useful proteins are substantially identical (*e.g.*, at least about 40%, preferably 50%, 60%, 70%, 80%, 90%, 95%, or 99%) to one of these sequences and retain the functional activity of the protein of the corresponding naturally-occurring protein yet differ in amino acid sequence due to natural allelic variation or mutagenesis.

To determine the percent identity of two amino acid sequences or of two nucleic acids, the sequences are aligned for optimal comparison purposes (*e.g.*, gaps can be introduced in the sequence of a first amino acid or nucleic acid sequence for optimal alignment with a second amino or nucleic acid sequence). The amino acid residues or nucleotides at corresponding amino acid positions or nucleotide positions are then compared. When a position in the first sequence is occupied by the same amino acid residue or nucleotide as the corresponding position in the second sequence, then the molecules are identical at that position. The percent identity between the two sequences is a function of the number of identical positions shared by the sequences (*i.e.*, % identity = # of identical positions/total # of positions (*e.g.*, overlapping positions) x100). In one embodiment the two sequences are the same length.

The determination of percent identity between two sequences can be accomplished using a mathematical algorithm. A preferred, non-limiting example of a mathematical algorithm utilized for the comparison of two sequences is the algorithm of Karlin and Altschul (1990) *Proc. Natl. Acad. Sci. USA* 87:2264-2268, modified as in Karlin and Altschul (1993) *Proc. Natl. Acad. Sci. USA* 90:5873-5877. Such an algorithm is incorporated into the NBLAST and XBLAST programs of Altschul, *et al.* (1990) *J. Mol. Biol.* 215:403-410. BLAST nucleotide searches can be performed with

the NBLAST program, score = 100, wordlength = 12 to obtain nucleotide sequences homologous to a nucleic acid molecules of the invention. BLAST protein searches can be performed with the XBLAST program, score = 50, wordlength = 3 to obtain amino acid sequences homologous to a protein molecules of the invention. To obtain gapped alignments for comparison purposes, Gapped BLAST can be utilized as described in Altschul *et al.* (1997) *Nucleic Acids Res.* 25:3389-3402. Alternatively, PSI-Blast can be used to perform an iterated search which detects distant relationships between molecules. When utilizing BLAST, Gapped BLAST, and PSI-Blast programs, the default parameters of the respective programs (*e.g.*, XBLAST and NBLAST) can be used. See http://www.ncbi.nlm.nih.gov. Another preferred, non-limiting example of a mathematical algorithm utilized for the comparison of sequences is the algorithm of Myers and Miller, (1988) *CABIOS* 4:11-17. Such an algorithm is incorporated into the ALIGN program (version 2.0) which is part of the GCG sequence alignment software package. When utilizing the ALIGN program for comparing amino acid sequences, a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4 can be used. Yet another useful algorithm for identifying regions of local sequence similarity and alignment is the FASTA algorithm as described in Pearson and Lipman (1988) *Proc. Natl. Acad. Sci. USA* 85:2444-2448. When using the FASTA algorithm for comparing nucleotide or amino acid sequences, a PAM120 weight residue table can, for example, be used with a *k*-tuple value of 2.

The percent identity between two sequences can be determined using techniques similar to those described above, with or without allowing gaps. In calculating percent identity, only exact matches are counted.

The invention also provides chimeric or fusion proteins corresponding to a marker of the invention. As used herein, a "chimeric protein" or "fusion protein" comprises all or part (preferably a biologically active part) of a polypeptide corresponding to a marker of the invention operably linked to a heterologous polypeptide (*i.e.*, a polypeptide other than the polypeptide corresponding to the marker). Within the fusion protein, the term "operably linked" is intended to indicate that the polypeptide of the invention and the heterologous polypeptide are fused in-frame to each other. The heterologous polypeptide can be fused to the amino-terminus or the carboxyl-terminus of the polypeptide of the invention.

One useful fusion protein is a GST fusion protein in which a polypeptide corresponding to a marker of the invention is fused to the carboxyl terminus of GST sequences. Such fusion proteins can facilitate the purification of a recombinant polypeptide of the invention.

In another embodiment, the fusion protein contains a heterologous signal sequence at its amino terminus. For example, the native signal sequence of a polypeptide corresponding to a marker of the invention can be removed and replaced with a signal sequence from another protein. For example, the gp67 secretory sequence of the baculovirus envelope protein can be used as a heterologous signal sequence (Ausubel *et al.*, ed., *Current Protocols in Molecular Biology*, John Wiley & Sons, NY, 1992). Other examples of eukaryotic heterologous signal sequences include the secretory sequences of melittin and human placental alkaline phosphatase (Stratagene; La Jolla, California). In yet another example, useful prokaryotic heterologous signal sequences include the phoA secretory signal (Sambrook *et al., supra*) and the protein A secretory signal (Pharmacia Biotech; Piscataway, New Jersey).

In yet another embodiment, the fusion protein is an immunoglobulin fusion protein in which all or part of a polypeptide corresponding to a marker of the invention is fused to sequences derived from a member of the immunoglobulin protein family. The immunoglobulin fusion proteins of the invention can be incorporated into pharmaceutical compositions and administered to a subject to inhibit an interaction between a ligand (soluble or membrane-bound) and a protein on the surface of a cell (receptor), to thereby suppress signal transduction *in vivo*. The immunoglobulin fusion protein can be used to affect the bioavailability of a cognate ligand of a polypeptide of the invention. Inhibition of ligand/receptor interaction can be useful therapeutically, both for treating proliferative and differentiative disorders and for modulating (*e.g.* promoting or inhibiting) cell survival. Moreover, the immunoglobulin fusion proteins of the invention can be used as immunogens to produce antibodies directed against a polypeptide of the invention in a subject, to purify ligands and in screening assays to identify molecules which inhibit the interaction of receptors with ligands.

Chimeric and fusion proteins of the invention can be produced by standard recombinant DNA techniques. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers. Alternatively, PCR amplification of gene fragments can be carried out using anchor primers which give rise to complementary overhangs between two consecutive gene fragments which can subsequently be annealed and re-amplified to generate a chimeric gene sequence (see, *e.g.*, Ausubel *et al., supra*). Moreover, many expression vectors are commercially available that already encode a fusion moiety (*e.g.*, a GST polypeptide). A nucleic acid encoding a polypeptide of the invention can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the polypeptide of the invention.

A signal sequence can be used to facilitate secretion and isolation of the secreted protein or other proteins of interest. Signal sequences are typically characterized by a core of hydrophobic amino acids which are generally cleaved from the mature protein during secretion in one or more cleavage events. Such signal peptides contain processing sites that allow cleavage of the signal sequence from the mature proteins as they pass through the secretory pathway. Thus, the invention pertains to the described polypeptides having a signal sequence, as well as to polypeptides from which the signal sequence has been proteolytically cleaved (*i.e.*, the cleavage products). In one embodiment, a nucleic acid sequence encoding a signal sequence can be operably linked in an expression vector to a protein of interest, such as a protein which is ordinarily not secreted or is otherwise difficult to isolate. The signal sequence directs secretion of the protein, such as from a eukaryotic host into which the expression vector is transformed, and the signal sequence is subsequently or concurrently cleaved. The protein can then be readily purified from the extracellular medium by art recognized methods. Alternatively, the signal sequence can be linked to the protein of interest using a sequence which facilitates purification, such as with a GST domain.

The present invention also pertains to variants of the polypeptides corresponding to individual markers of the invention. Such variants have an altered amino acid sequence which can function as either agonists (mimetics) or as antagonists. Variants can be generated by mutagenesis, *e.g.*, discrete point mutation or truncation. An agonist can retain substantially the same, or a subset, of the biological activities of the naturally occurring form of the protein. An antagonist of a protein can inhibit one or more of the activities of the naturally occurring form of the protein by, for example, competitively binding to a downstream or upstream member of a cellular signaling cascade which includes the protein of interest. Thus, specific biological effects can be elicited by treatment with a variant of limited function. Treatment of a subject with a variant having a subset of the biological activities of the naturally occurring form of the protein can have fewer side effects in a subject relative to treatment with the naturally occurring form of the protein.

Variants of a protein of the invention which function as either agonists (mimetics) or as antagonists can be identified by screening combinatorial libraries of mutants, *e.g.*, truncation mutants, of the protein of the invention for agonist or antagonist activity. In one embodiment, a variegated library of variants is generated by combinatorial mutagenesis at the nucleic acid level and is encoded by a variegated gene library. A variegated library of variants can be produced by, for example, enzymatically ligating a mixture of synthetic oligonucleotides into gene sequences such that a degenerate set of potential protein sequences is expressible as individual polypeptides,

or alternatively, as a set of larger fusion proteins (*e.g.*, for phage display). There are a variety of methods which can be used to produce libraries of potential variants of the polypeptides of the invention from a degenerate oligonucleotide sequence. Methods for synthesizing degenerate oligonucleotides are known in the art (see, *e.g.*, Narang, 1983, *Tetrahedron* 39:3; Itakura *et al.*, 1984, *Annu. Rev. Biochem.* 53:323; Itakura *et al.*, 1984, *Science* 198:1056; Ike *et al.*, 1983 *Nucleic Acid Res.* 11:477).

In addition, libraries of fragments of the coding sequence of a polypeptide corresponding to a marker of the invention can be used to generate a variegated population of polypeptides for screening and subsequent selection of variants. For example, a library of coding sequence fragments can be generated by treating a double stranded PCR fragment of the coding sequence of interest with a nuclease under conditions wherein nicking occurs only about once per molecule, denaturing the double stranded DNA, renaturing the DNA to form double stranded DNA which can include sense/antisense pairs from different nicked products, removing single stranded portions from reformed duplexes by treatment with S1 nuclease, and ligating the resulting fragment library into an expression vector. By this method, an expression library can be derived which encodes amino terminal and internal fragments of various sizes of the protein of interest.

Several techniques are known in the art for screening gene products of combinatorial libraries made by point mutations or truncation, and for screening cDNA libraries for gene products having a selected property. The most widely used techniques, which are amenable to high through-put analysis, for screening large gene libraries typically include cloning the gene library into replicable expression vectors, transforming appropriate cells with the resulting library of vectors, and expressing the combinatorial genes under conditions in which detection of a desired activity facilitates isolation of the vector encoding the gene whose product was detected. Recursive ensemble mutagenesis (REM), a technique which enhances the frequency of functional mutants in the libraries, can be used in combination with the screening assays to identify variants of a protein of the invention (Arkin and Yourvan, 1992, *Proc. Natl. Acad. Sci. USA 89*:7811-7815; Delgrave *et al.*, 1993, *Protein Engineering* 6(3):327- 331).

An isolated polypeptide corresponding to a marker of the invention, or a fragment thereof, can be used as an immunogen to generate antibodies using standard techniques for polyclonal and monoclonal antibody preparation. The full-length polypeptide or protein can be used or, alternatively, the invention provides antigenic peptide fragments for use as immunogens. The antigenic peptide of a protein of the invention comprises at least 8 (preferably 10, 15, 20, or 30 or more) amino acid residues of the amino acid sequence of one of the polypeptides of the invention, and encompasses

an epitope of the protein such that an antibody raised against the peptide forms a specific immune complex with a marker of the invention to which the protein corresponds. Preferred epitopes encompassed by the antigenic peptide are regions that are located on the surface of the protein, *e.g.*, hydrophilic regions. Hydrophobicity sequence analysis, hydrophilicity sequence analysis, or similar analyses can be used to identify hydrophilic regions.

An immunogen typically is used to prepare antibodies by immunizing a suitable (*i.e.* immunocompetent) subject such as a rabbit, goat, mouse, or other mammal or vertebrate. An appropriate immunogenic preparation can contain, for example, recombinantly-expressed or chemically-synthesized polypeptide. The preparation can further include an adjuvant, such as Freund's complete or incomplete adjuvant, or a similar immunostimulatory agent.

Accordingly, another aspect of the invention pertains to antibodies directed against a polypeptide of the invention. The terms "antibody" and "antibody substance" as used interchangeably herein refer to immunoglobulin molecules and immunologically active portions of immunoglobulin molecules, *i.e.*, molecules that contain an antigen binding site which specifically binds an antigen, such as a polypeptide of the invention, e.g., an epitope of a polypeptide of the invention. A molecule which specifically binds to a given polypeptide of the invention is a molecule which binds the polypeptide, but does not substantially bind other molecules in a sample, *e.g.*, a biological sample, which naturally contains the polypeptide. Examples of immunologically active portions of immunoglobulin molecules include F(ab) and $F(ab')_2$ fragments which can be generated by treating the antibody with an enzyme such as pepsin. The invention provides polyclonal and monoclonal antibodies. The term "monoclonal antibody" or "monoclonal antibody composition", as used herein, refers to a population of antibody molecules that contain only one species of an antigen binding site capable of immunoreacting with a particular epitope.

Polyclonal antibodies can be prepared as described above by immunizing a suitable subject with a polypeptide of the invention as an immunogen. Preferred polyclonal antibody compositions are ones that have been selected for antibodies directed against a polypeptide or polypeptides of the invention. Particularly preferred polyclonal antibody preparations are ones that contain only antibodies directed against a polypeptide or polypeptides of the invention. Particularly preferred immunogen compositions are those that contain no other human proteins such as, for example, immunogen compositions made using a non-human host cell for recombinant expression of a polypeptide of the invention. In such a manner, the only human epitope or epitopes

recognized by the resulting antibody compositions raised against this immunogen will be present as part of a polypeptide or polypeptides of the invention.

The antibody titer in the immunized subject can be monitored over time by standard techniques, such as with an enzyme linked immunosorbent assay (ELISA) using immobilized polypeptide. If desired, the antibody molecules can be harvested or isolated from the subject (*e.g.*, from the blood or serum of the subject) and further purified by well-known techniques, such as protein A chromatography to obtain the IgG fraction. Alternatively, antibodies specific for a protein or polypeptide of the invention can be selected or (*e.g.*, partially purified) or purified by, *e.g.*, affinity chromatography. For example, a recombinantly expressed and purified (or partially purified) protein of the invention is produced as described herein, and covalently or non-covalently coupled to a solid support such as, for example, a chromatography column. The column can then be used to affinity purify antibodies specific for the proteins of the invention from a sample containing antibodies directed against a large number of different epitopes, thereby generating a substantially purified antibody composition, *i.e.*, one that is substantially free of contaminating antibodies. By a substantially purified antibody composition is meant, in this context, that the antibody sample contains at most only 30% (by dry weight) of contaminating antibodies directed against epitopes other than those of the desired protein or polypeptide of the invention, and preferably at most 20%, yet more preferably at most 10%, and most preferably at most 5% (by dry weight) of the sample is contaminating antibodies. A purified antibody composition means that at least 99% of the antibodies in the composition are directed against the desired protein or polypeptide of the invention.

At an appropriate time after immunization, *e.g.*, when the specific antibody titers are highest, antibody-producing cells can be obtained from the subject and used to prepare monoclonal antibodies by standard techniques, such as the hybridoma technique originally described by Kohler and Milstein (1975) *Nature* 256:495-497, the human B cell hybridoma technique (see Kozbor *et al.,* 1983, *Immunol. Today* 4:72), the EBV-hybridoma technique (see Cole *et al.*, pp. 77-96 In *Monoclonal Antibodies and Cancer Therapy*, Alan R. Liss, Inc., 1985) or trioma techniques. The technology for producing hybridomas is well known (see generally *Current Protocols in Immunology,* Coligan *et al.* ed., John Wiley & Sons, New York, 1994). Hybridoma cells producing a monoclonal antibody of the invention are detected by screening the hybridoma culture supernatants for antibodies that bind the polypeptide of interest, *e.g.*, using a standard ELISA assay.

Alternative to preparing monoclonal antibody-secreting hybridomas, a monoclonal antibody directed against a polypeptide of the invention can be identified

and isolated by screening a recombinant combinatorial immunoglobulin library (*e.g.*, an antibody phage display library) with the polypeptide of interest. Kits for generating and screening phage display libraries are commercially available (*e.g.*, the Pharmacia *Recombinant Phage Antibody System*, Catalog No. 27-9400-01; and the Stratagene *SurfZAP Phage Display Kit*, Catalog No. 240612). Additionally, examples of methods and reagents particularly amenable for use in generating and screening antibody display library can be found in, for example, U.S. Patent No. 5,223,409; PCT Publication No. WO 92/18619; PCT Publication No. WO 91/17271; PCT Publication No. WO 92/20791; PCT Publication No. WO 92/15679; PCT Publication No. WO 93/01288; PCT Publication No. WO 92/01047; PCT Publication No. WO 92/09690; PCT Publication No. WO 90/02809; Fuchs *et al.* (1991) *Bio/Technology* 9:1370-1372; Hay *et al.* (1992) *Hum. Antibod. Hybridomas* 3:81-85; Huse *et al.* (1989) *Science* 246:1275-1281; Griffiths *et al.* (1993) *EMBO J.* 12:725-734.

Additionally, recombinant antibodies, such as chimeric and humanized monoclonal antibodies, comprising both human and non-human portions, which can be made using standard recombinant DNA techniques, are within the scope of the invention. A chimeric antibody is a molecule in which different portions are derived from different animal species, such as those having a variable region derived from a murine mAb and a human immunoglobulin constant region. (See, *e.g.*, Cabilly et al., U.S. Patent No. 4,816,567; and Boss et al., U.S. Patent No. 4,816,397, which are incorporated herein by reference in their entirety.) Humanized antibodies are antibody molecules from non-human species having one or more complementarily determining regions (CDRs) from the non-human species and a framework region from a human immunoglobulin molecule. (See, *e.g.*, Queen, U.S. Patent No. 5,585,089, which is incorporated herein by reference in its entirety.) Such chimeric and humanized monoclonal antibodies can be produced by recombinant DNA techniques known in the art, for example using methods described in PCT Publication No. WO 87/02671; European Patent Application 184,187; European Patent Application 171,496; European Patent Application 173,494; PCT Publication No. WO 86/01533; U.S. Patent No. 4,816,567; European Patent Application 125,023; Better *et al.* (1988) *Science* 240:1041-1043; Liu *et al.* (1987) *Proc. Natl. Acad. Sci. USA* 84:3439-3443; Liu *et al.* (1987) *J. Immunol.* 139:3521- 3526; Sun *et al.* (1987) *Proc. Natl. Acad. Sci. USA* 84:214-218; Nishimura *et al.* (1987) *Cancer Res.* 47:999-1005; Wood *et al.* (1985) *Nature* 314:446-449; and Shaw *et al.* (1988) *J. Natl. Cancer Inst.* 80:1553-1559); Morrison (1985) *Science* 229:1202-1207; Oi *et al.* (1986) *Bio/Techniques* 4:214; U.S. Patent 5,225,539; Jones *et al.* (1986) *Nature* 321:552-525; Verhoeyan *et al.* (1988) *Science* 239:1534; and Beidler *et al.* (1988) *J. Immunol.* 141:4053-4060.

Antibodies of the invention may be used as therapeutic agents in treating cancers. In a preferred embodiment, completely human antibodies of the invention are used for therapeutic treatment of human cancer patients, particularly those having cervical cancer. Such antibodies can be produced, for example, using transgenic mice which are incapable of expressing endogenous immunoglobulin heavy and light chains genes, but which can express human heavy and light chain genes. The transgenic mice are immunized in the normal fashion with a selected antigen, *e.g.*, all or a portion of a polypeptide corresponding to a marker of the invention. Monoclonal antibodies directed against the antigen can be obtained using conventional hybridoma technology. The human immunoglobulin transgenes harbored by the transgenic mice rearrange during B cell differentiation, and subsequently undergo class switching and somatic mutation. Thus, using such a technique, it is possible to produce therapeutically useful IgG, IgA and IgE antibodies. For an overview of this technology for producing human antibodies, see Lonberg and Huszar (1995) *Int. Rev. Immunol.* 13:65-93). For a detailed discussion of this technology for producing human antibodies and human monoclonal antibodies and protocols for producing such antibodies, see, *e.g.*, U.S. Patent 5,625,126; U.S. Patent 5,633,425; U.S. Patent 5,569,825; U.S. Patent 5,661,016; and U.S. Patent 5,545,806. In addition, companies such as Abgenix, Inc. (Freemont, CA), can be engaged to provide human antibodies directed against a selected antigen using technology similar to that described above.

Completely human antibodies which recognize a selected epitope can be generated using a technique referred to as "guided selection." In this approach a selected non-human monoclonal antibody, *e.g.*, a murine antibody, is used to guide the selection of a completely human antibody recognizing the same epitope (Jespers *et al.*, 1994, *Bio/technology* 12:899-903).

An antibody directed against a polypeptide corresponding to a marker of the invention (*e.g.*, a monoclonal antibody) can be used to isolate the polypeptide by standard techniques, such as affinity chromatography or immunoprecipitation. Moreover, such an antibody can be used to detect the marker (*e.g.*, in a cellular lysate or cell supernatant) in order to evaluate the level and pattern of expression of the marker. The antibodies can also be used diagnostically to monitor protein levels in tissues or body fluids (*e.g.* in an ovary-associated body fluid) as part of a clinical testing procedure, *e.g.*, to, for example, determine the efficacy of a given treatment regimen. Detection can be facilitated by coupling the antibody to a detectable substance. Examples of detectable substances include various enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, and radioactive materials. Examples of suitable enzymes include horseradish peroxidase, alkaline

phosphatase, β-galactosidase, or acetylcholinesterase; examples of suitable prosthetic group complexes include streptavidin/biotin and avidin/biotin; examples of suitable fluorescent materials include umbelliferone, fluorescein, fluorescein isothiocyanate, rhodamine, dichlorotriazinylamine fluorescein, dansyl chloride or phycoerythrin; an example of a luminescent material includes luminol; examples of bioluminescent materials include luciferase, luciferin, and aequorin, and examples of suitable radioactive material include ^{125}I, ^{131}I, ^{35}S or ^{3}H.

Further, an antibody (or fragment thereof) can be conjugated to a therapeutic moiety such as a cytotoxin, a therapeutic agent or a radioactive metal ion. A cytotoxin or cytotoxic agent includes any agent that is detrimental to cells. Examples include taxol, cytochalasin B, gramicidin D, ethidium bromide, emetine, mitomycin, etoposide, tenoposide, vincristine, vinblastine, colchicin, doxorubicin, daunorubicin, dihydroxy anthracin dione, mitoxantrone, mithramycin, actinomycin D, 1-dehydrotestosterone, glucocorticoids, procaine, tetracaine, lidocaine, propranolol, and puromycin and analogs or homologs thereof. Therapeutic agents include, but are not limited to, antimetabolites (*e.g.*, methotrexate, 6-mercaptopurine, 6-thioguanine, cytarabine, 5-fluorouracil decarbazine), alkylating agents (*e.g.*, mechlorethamine, thioepa chlorambucil, melphalan, carmustine (BSNU) and lomustine (CCNU), cyclothosphamide, busulfan, dibromomannitol, streptozotocin, mitomycin C, and cis-dichlorodiamine platinum (II) (DDP) cisplatin), anthracyclines (*e.g.*, daunorubicin (formerly daunomycin) and doxorubicin), antibiotics (*e.g.*, dactinomycin (formerly actinomycin), bleomycin, mithramycin, and anthramycin (AMC)), and anti-mitotic agents (*e.g.*, vincristine and vinblastine).

The conjugates of the invention can be used for modifying a given biological response, the drug moiety is not to be construed as limited to classical chemical therapeutic agents. For example, the drug moiety may be a protein or polypeptide possessing a desired biological activity. Such proteins may include, for example, a toxin such as abrin, ricin A, pseudomonas exotoxin, or diphtheria toxin; a protein such as tumor necrosis factor, .alpha.-interferon, .beta.-interferon, nerve growth factor, platelet derived growth factor, tissue plasminogen activator; or, biological response modifiers such as, for example, lymphokines, interleukin-1 ("IL-1"), interleukin-2 ("IL-2"), interleukin-6 ("IL-6"), granulocyte macrophase colony stimulating factor ("GM-CSF"), granulocyte colony stimulating factor ("G-CSF"), or other growth factors.

Techniques for conjugating such therapeutic moiety to antibodies are well known, see, *e.g.*, Arnon et al., "Monoclonal Antibodies For Immunotargeting Of Drugs In Cancer Therapy", in Monoclonal Antibodies And Cancer Therapy, Reisfeld et al. (eds.), pp. 243-56 (Alan R. Liss, Inc. 1985); Hellstrom et al., "Antibodies For Drug Delivery", in Controlled Drug Delivery (2nd Ed.), Robinson et al. (eds.), pp. 623-53 (Marcel Dekker, Inc. 1987); Thorpe, "Antibody Carriers Of Cytotoxic Agents In Cancer Therapy: A Review", in Monoclonal Antibodies '84: Biological And Clinical Applications, Pinchera et al. (eds.), pp. 475-506 (1985); "Analysis, Results, And Future Prospective Of The Therapeutic Use Of Radiolabeled Antibody In Cancer Therapy", in Monoclonal Antibodies For Cancer Detection And Therapy, Baldwin et al. (eds.), pp. 303-16 (Academic Press 1985), and Thorpe et al., "The Preparation And Cytotoxic Properties Of Antibody-Toxin Conjugates", Immunol. Rev., 62:119-58 (1982).

Alternatively, an antibody can be conjugated to a second antibody to form an antibody heteroconjugate as described by Segal in U.S. Patent No. 4,676,980.

Accordingly, in one aspect, the invention provides substantially purified antibodies or fragments thereof, and non-human antibodies or fragments thereof, which antibodies or fragments specifically bind to a polypeptide comprising an amino acid sequence selected from the group consisting of the amino acid sequences of the present invention, an amino acid sequence encoded by the cDNA of the present invention, a fragment of at least 15 amino acid residues of an amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to the amino acid sequence of the present invention (wherein the percent identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C. In various embodiments, the substantially purified antibodies of the invention, or fragments thereof, can be human, non-human, chimeric and/or humanized antibodies.

In another aspect, the invention provides non-human antibodies or fragments thereof, which antibodies or fragments specifically bind to a polypeptide comprising an amino acid sequence selected from the group consisting of: the amino acid sequence of

the present invention, an amino acid sequence encoded by the cDNA of the present invention, a fragment of at least 15 amino acid residues of the amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to the amino acid sequence of the present invention (wherein the percent identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C. Such non-human antibodies can be goat, mouse, sheep, horse, chicken, rabbit, or rat antibodies. Alternatively, the non-human antibodies of the invention can be chimeric and/or humanized antibodies. In addition, the non-human antibodies of the invention can be polyclonal antibodies or monoclonal antibodies.

In still a further aspect, the invention provides monoclonal antibodies or fragments thereof, which antibodies or fragments specifically bind to a polypeptide comprising an amino acid sequence selected from the group consisting of the amino acid sequences of the present invention, an amino acid sequence encoded by the cDNA of the present invention, a fragment of at least 15 amino acid residues of an amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to an amino acid sequence of the present invention (wherein the percent identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C. The monoclonal antibodies can be human, humanized, chimeric and/or non-human antibodies.

The substantially purified antibodies or fragments thereof may specifically bind to a signal peptide, a secreted sequence, an extracellular domain, a transmembrane or a cytoplasmic domain or cytoplasmic membrane of a polypeptide of the invention. In a particularly preferred embodiment, the substantially purified antibodies or fragments thereof, the non-human antibodies or fragments thereof, and/or

the monoclonal antibodies or fragments thereof, of the invention specifically bind to a secreted sequence or an extracellular domain of the amino acid sequences of the present invention.

Any of the antibodies of the invention can be conjugated to a therapeutic moiety or to a detectable substance. Non-limiting examples of detectable substances that can be conjugated to the antibodies of the invention are an enzyme, a prosthetic group, a fluorescent material, a luminescent material, a bioluminescent material, and a radioactive material.

The invention also provides a kit containing an antibody of the invention conjugated to a detectable substance, and instructions for use. Still another aspect of the invention is a pharmaceutical composition comprising an antibody of the invention and a pharmaceutically acceptable carrier. In preferred embodiments, the pharmaceutical composition contains an antibody of the invention, a therapeutic moiety, and a pharmaceutically acceptable carrier.

Still another aspect of the invention is a method of making an antibody that specifically recognizes a polypeptide of the present invention, the method comprising immunizing a mammal with a polypeptide. The polypeptide used as an immungen comprises an amino acid sequence selected from the group consisting of the amino acid sequence of the present invention, an amino acid sequence encoded by the cDNA of the nucleic acid molecules of the present invention, a fragment of at least 15 amino acid residues of the amino acid sequence of the present invention, an amino acid sequence which is at least 95% identical to the amino acid sequence of the present invention (wherein the percent identity is determined using the ALIGN program of the GCG software package with a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4) and an amino acid sequence which is encoded by a nucleic acid molecule which hybridizes to a nucleic acid molecule consisting of the nucleic acid molecules of the present invention, or a complement thereof, under conditions of hybridization of 6X SSC at 45°C and washing in 0.2 X SSC, 0.1% SDS at 65°C.

After immunization, a sample is collected from the mammal that contains an antibody that specifically recognizes the polypeptide. Preferably, the polypeptide is recombinantly produced using a non-human host cell. Optionally, the antibodies can be further purified from the sample using techniques well known to those of skill in the art. The method can further comprise producing a monoclonal antibody- producing cell from

the cells of the mammal. Optionally, antibodies are collected from the antibody-producing cell.

III. Recombinant Expression Vectors and Host Cells

Another aspect of the invention pertains to vectors, preferably expression vectors, containing a nucleic acid encoding a polypeptide corresponding to a marker of the invention (or a portion of such a polypeptide). As used herein, the term "vector" refers to a nucleic acid molecule capable of transporting another nucleic acid to which it has been linked. One type of vector is a "plasmid", which refers to a circular double stranded DNA loop into which additional DNA segments can be ligated. Another type of vector is a viral vector, wherein additional DNA segments can be ligated into the viral genome. Certain vectors are capable of autonomous replication in a host cell into which they are introduced (*e.g.*, bacterial vectors having a bacterial origin of replication and episomal mammalian vectors). Other vectors (*e.g.*, non-episomal mammalian vectors) are integrated into the genome of a host cell upon introduction into the host cell, and thereby are replicated along with the host genome. Moreover, certain vectors, namely expression vectors, are capable of directing the expression of genes to which they are operably linked. In general, expression vectors of utility in recombinant DNA techniques are often in the form of plasmids (vectors). However, the invention is intended to include such other forms of expression vectors, such as viral vectors (*e.g.*, replication defective retroviruses, adenoviruses and adeno-associated viruses), which serve equivalent functions.

The recombinant expression vectors of the invention comprise a nucleic acid of the invention in a form suitable for expression of the nucleic acid in a host cell. This means that the recombinant expression vectors include one or more regulatory sequences, selected on the basis of the host cells to be used for expression, which is operably linked to the nucleic acid sequence to be expressed. Within a recombinant expression vector, "operably linked" is intended to mean that the nucleotide sequence of interest is linked to the regulatory sequence(s) in a manner which allows for expression of the nucleotide sequence (*e.g.*, in an *in vitro* transcription/translation system or in a host cell when the vector is introduced into the host cell). The term "regulatory sequence" is intended to include promoters, enhancers and other expression control elements (*e.g.*, polyadenylation signals). Such regulatory sequences are described, for example, in Goeddel, *Methods in Enzymology: Gene Expression Technology* vol.185, Academic Press, San Diego, CA (1991). Regulatory sequences include those which

direct constitutive expression of a nucleotide sequence in many types of host cell and those which direct expression of the nucleotide sequence only in certain host cells (*e.g.*, tissue-specific regulatory sequences). It will be appreciated by those skilled in the art that the design of the expression vector can depend on such factors as the choice of the host cell to be transformed, the level of expression of protein desired, and the like. The expression vectors of the invention can be introduced into host cells to thereby produce proteins or peptides, including fusion proteins or peptides, encoded by nucleic acids as described herein.

The recombinant expression vectors of the invention can be designed for expression of a polypeptide corresponding to a marker of the invention in prokaryotic (*e.g.*, *E. coli*) or eukaryotic cells (*e.g.*, insect cells {using baculovirus expression vectors}, yeast cells or mammalian cells). Suitable host cells are discussed further in Goeddel, *supra*. Alternatively, the recombinant expression vector can be transcribed and translated *in vitro*, for example using T7 promoter regulatory sequences and T7 polymerase.

Expression of proteins in prokaryotes is most often carried out in *E. coli* with vectors containing constitutive or inducible promoters directing the expression of either fusion or non-fusion proteins. Fusion vectors add a number of amino acids to a protein encoded therein, usually to the amino terminus of the recombinant protein. Such fusion vectors typically serve three purposes: 1) to increase expression of recombinant protein; 2) to increase the solubility of the recombinant protein; and 3) to aid in the purification of the recombinant protein by acting as a ligand in affinity purification. Often, in fusion expression vectors, a proteolytic cleavage site is introduced at the junction of the fusion moiety and the recombinant protein to enable separation of the recombinant protein from the fusion moiety subsequent to purification of the fusion protein. Such enzymes, and their cognate recognition sequences, include Factor Xa, thrombin and enterokinase. Typical fusion expression vectors include pGEX (Pharmacia Biotech Inc; Smith and Johnson, 1988, *Gene* 67:31-40), pMAL (New England Biolabs, Beverly, MA) and pRIT5 (Pharmacia, Piscataway, NJ) which fuse glutathione S-transferase (GST), maltose E binding protein, or protein A, respectively, to the target recombinant protein.

Examples of suitable inducible non-fusion *E. coli* expression vectors include pTrc (Amann *et al.*, 1988, *Gene* 69:301-315) and pET 11d (Studier *et al.*, p. 60-89, In *Gene Expression Technology: Methods in Enzymology* vol.185, Academic Press, San Diego, CA, 1991). Target gene expression from the pTrc vector relies on host RNA polymerase transcription from a hybrid trp-lac fusion promoter. Target gene expression from the pET 11d vector relies on transcription from a T7 gn10-lac fusion promoter

mediated by a co-expressed viral RNA polymerase (T7 gn1). This viral polymerase is supplied by host strains BL21(DE3) or HMS174(DE3) from a resident prophage harboring a T7 gn1 gene under the transcriptional control of the lacUV 5 promoter.

One strategy to maximize recombinant protein expression in *E. coli* is to express the protein in a host bacteria with an impaired capacity to proteolytically cleave the recombinant protein (Gottesman, p. 119-128, In *Gene Expression Technology: Methods in Enzymology* vol. 185, Academic Press, San Diego, CA, 1990. Another strategy is to alter the nucleic acid sequence of the nucleic acid to be inserted into an expression vector so that the individual codons for each amino acid are those preferentially utilized in *E. coli* (Wada *et al.,* 1992, *Nucleic Acids Res.* 20:2111-2118). Such alteration of nucleic acid sequences of the invention can be carried out by standard DNA synthesis techniques.

In another embodiment, the expression vector is a yeast expression vector. Examples of vectors for expression in yeast *S. cerevisiae* include pYepSec1 (Baldari *et al.,* 1987, *EMBO J.* 6:229-234), pMFa (Kurjan and Herskowitz, 1982, *Cell* 30:933-943), pJRY88 (Schultz *et al.,* 1987, *Gene* 54:113-123), pYES2 (Invitrogen Corporation, San Diego, CA), and pPicZ (Invitrogen Corp, San Diego, CA).

Alternatively, the expression vector is a baculovirus expression vector. Baculovirus vectors available for expression of proteins in cultured insect cells (*e.g.*, Sf 9 cells) include the pAc series (Smith *et al.*, 1983, *Mol. Cell Biol.* 3:2156-2165) and the pVL series (Lucklow and Summers, 1989, *Virology* 170:31-39).

In yet another embodiment, a nucleic acid of the invention is expressed in mammalian cells using a mammalian expression vector. Examples of mammalian expression vectors include pCDM8 (Seed, 1987, *Nature* 329:840) and pMT2PC (Kaufman *et al.,* 1987, *EMBO J.* 6:187-195). When used in mammalian cells, the expression vector's control functions are often provided by viral regulatory elements. For example, commonly used promoters are derived from polyoma, Adenovirus 2, cytomegalovirus and Simian Virus 40. For other suitable expression systems for both prokaryotic and eukaryotic cells see chapters 16 and 17 of Sambrook *et al.*, *supra.*

In another embodiment, the recombinant mammalian expression vector is capable of directing expression of the nucleic acid preferentially in a particular cell type (*e.g.*, tissue-specific regulatory elements are used to express the nucleic acid). Tissue-specific regulatory elements are known in the art. Non-limiting examples of suitable tissue-specific promoters include the albumin promoter (liver-specific; Pinkert *et al.,* 1987, *Genes Dev.* 1:268-277), lymphoid-specific promoters (Calame and Eaton, 1988, *Adv. Immunol.* 43:235-275), in particular promoters of T cell receptors (Winoto and Baltimore, 1989, *EMBO J.* 8:729-733) and immunoglobulins (Banerji *et al.,* 1983, *Cell*

33:729-740; Queen and Baltimore, 1983, *Cell* 33:741-748), neuron-specific promoters (*e.g.*, the neurofilament promoter; Byrne and Ruddle, 1989, *Proc. Natl. Acad. Sci. USA* 86:5473-5477), pancreas-specific promoters (Edlund *et al.*, 1985, *Science* 230:912-916), and mammary gland-specific promoters (*e.g.*, milk whey promoter; U.S. Patent No. 4,873,316 and European Application Publication No. 264,166). Developmentally-regulated promoters are also encompassed, for example the murine hox promoters (Kessel and Gruss, 1990, *Science* 249:374-379) and the α-fetoprotein promoter (Camper and Tilghman, 1989, *Genes Dev.* 3:537-546).

The invention further provides a recombinant expression vector comprising a DNA molecule of the invention cloned into the expression vector in an antisense orientation. That is, the DNA molecule is operably linked to a regulatory sequence in a manner which allows for expression (by transcription of the DNA molecule) of an RNA molecule which is antisense to the mRNA encoding a polypeptide of the invention. Regulatory sequences operably linked to a nucleic acid cloned in the antisense orientation can be chosen which direct the continuous expression of the antisense RNA molecule in a variety of cell types, for instance viral promoters and/or enhancers, or regulatory sequences can be chosen which direct constitutive, tissue-specific or cell type specific expression of antisense RNA. The antisense expression vector can be in the form of a recombinant plasmid, phagemid, or attenuated virus in which antisense nucleic acids are produced under the control of a high efficiency regulatory region, the activity of which can be determined by the cell type into which the vector is introduced. For a discussion of the regulation of gene expression using antisense genes see Weintraub *et al.*, 1986, *Trends in Genetics*, Vol. 1(1).

Another aspect of the invention pertains to host cells into which a recombinant expression vector of the invention has been introduced. The terms "host cell" and "recombinant host cell" are used interchangeably herein. It is understood that such terms refer not only to the particular subject cell but to the progeny or potential progeny of such a cell. Because certain modifications may occur in succeeding generations due to either mutation or environmental influences, such progeny may not, in fact, be identical to the parent cell, but are still included within the scope of the term as used herein.

A host cell can be any prokaryotic (*e.g.*, *E. coli*) or eukaryotic cell (*e.g.*, insect cells, yeast or mammalian cells).

Vector DNA can be introduced into prokaryotic or eukaryotic cells via conventional transformation or transfection techniques. As used herein, the terms "transformation" and "transfection" are intended to refer to a variety of art-recognized techniques for introducing foreign nucleic acid into a host cell, including calcium

phosphate or calcium chloride co-precipitation, DEAE-dextran-mediated transfection, lipofection, or electroporation. Suitable methods for transforming or transfecting host cells can be found in Sambrook, *et al.* (*supra*), and other laboratory manuals.

For stable transfection of mammalian cells, it is known that, depending upon the expression vector and transfection technique used, only a small fraction of cells may integrate the foreign DNA into their genome. In order to identify and select these integrants, a gene that encodes a selectable marker (*e.g.*, for resistance to antibiotics) is generally introduced into the host cells along with the gene of interest. Preferred selectable markers include those which confer resistance to drugs, such as G418, hygromycin and methotrexate. Cells stably transfected with the introduced nucleic acid can be identified by drug selection (*e.g.*, cells that have incorporated the selectable marker gene will survive, while the other cells die).

A host cell of the invention, such as a prokaryotic or eukaryotic host cell in culture, can be used to produce a polypeptide corresponding to a marker of the invention. Accordingly, the invention further provides methods for producing a polypeptide corresponding to a marker of the invention using the host cells of the invention. In one embodiment, the method comprises culturing the host cell of invention (into which a recombinant expression vector encoding a polypeptide of the invention has been introduced) in a suitable medium such that the marker is produced. In another embodiment, the method further comprises isolating the marker polypeptide from the medium or the host cell.

The host cells of the invention can also be used to produce nonhuman transgenic animals. For example, in one embodiment, a host cell of the invention is a fertilized oocyte or an embryonic stem cell into which a sequences encoding a polypeptide corresponding to a marker of the invention have been introduced. Such host cells can then be used to create non-human transgenic animals in which exogenous sequences encoding a marker protein of the invention have been introduced into their genome or homologous recombinant animals in which endogenous gene(s) encoding a polypeptide corresponding to a marker of the invention sequences have been altered. Such animals are useful for studying the function and/or activity of the polypeptide corresponding to the marker and for identifying and/or evaluating modulators of polypeptide activity. As used herein, a "transgenic animal" is a non-human animal, preferably a mammal, more preferably a rodent such as a rat or mouse, in which one or more of the cells of the animal includes a transgene. Other examples of transgenic animals include non-human primates, sheep, dogs, cows, goats, chickens, amphibians, etc. A transgene is exogenous DNA which is integrated into the genome of a cell from which a transgenic animal develops and which remains in the genome of the mature

animal, thereby directing the expression of an encoded gene product in one or more cell types or tissues of the transgenic animal. As used herein, an "homologous recombinant animal" is a non-human animal, preferably a mammal, more preferably a mouse, in which an endogenous gene has been altered by homologous recombination between the endogenous gene and an exogenous DNA molecule introduced into a cell of the animal, *e.g.*, an embryonic cell of the animal, prior to development of the animal.

A transgenic animal of the invention can be created by introducing a nucleic acid encoding a polypeptide corresponding to a marker of the invention into the male pronuclei of a fertilized oocyte, *e.g.*, by microinjection, retroviral infection, and allowing the oocyte to develop in a pseudopregnant female foster animal. Intronic sequences and polyadenylation signals can also be included in the transgene to increase the efficiency of expression of the transgene. A tissue-specific regulatory sequence(s) can be operably linked to the transgene to direct expression of the polypeptide of the invention to particular cells. Methods for generating transgenic animals via embryo manipulation and microinjection, particularly animals such as mice, have become conventional in the art and are described, for example, in U.S. Patent Nos. 4,736,866 and 4,870,009, U.S. Patent No. 4,873,191 and in Hogan, *Manipulating the Mouse Embryo*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., 1986. Similar methods are used for production of other transgenic animals. A transgenic founder animal can be identified based upon the presence of the transgene in its genome and/or expression of mRNA encoding the transgene in tissues or cells of the animals. A transgenic founder animal can then be used to breed additional animals carrying the transgene. Moreover, transgenic animals carrying the transgene can further be bred to other transgenic animals carrying other transgenes.

To create an homologous recombinant animal, a vector is prepared which contains at least a portion of a gene encoding a polypeptide corresponding to a marker of the invention into which a deletion, addition or substitution has been introduced to thereby alter, *e.g.*, functionally disrupt, the gene. In a preferred embodiment, the vector is designed such that, upon homologous recombination, the endogenous gene is functionally disrupted (*i.e.*, no longer encodes a functional protein; also referred to as a "knock out" vector). Alternatively, the vector can be designed such that, upon homologous recombination, the endogenous gene is mutated or otherwise altered but still encodes functional protein (*e.g.*, the upstream regulatory region can be altered to thereby alter the expression of the endogenous protein). In the homologous recombination vector, the altered portion of the gene is flanked at its 5' and 3' ends by additional nucleic acid of the gene to allow for homologous recombination to occur between the exogenous gene carried by the vector and an endogenous gene in an

embryonic stem cell. The additional flanking nucleic acid sequences are of sufficient length for successful homologous recombination with the endogenous gene. Typically, several kilobases of flanking DNA (both at the 5' and 3' ends) are included in the vector (see, *e.g.*, Thomas and Capecchi, 1987, *Cell* 51:503 for a description of homologous recombination vectors). The vector is introduced into an embryonic stem cell line (*e.g.*, by electroporation) and cells in which the introduced gene has homologously recombined with the endogenous gene are selected (see, *e.g.*, Li *et al.*, 1992, *Cell* 69:915). The selected cells are then injected into a blastocyst of an animal (*e.g.*, a mouse) to form aggregation chimeras (see, *e.g.*, Bradley, *Teratocarcinomas and Embryonic Stem Cells: A Practical Approach*, Robertson, Ed., IRL, Oxford, 1987, pp. 113-152). A chimeric embryo can then be implanted into a suitable pseudopregnant female foster animal and the embryo brought to term. Progeny harboring the homologously recombined DNA in their germ cells can be used to breed animals in which all cells of the animal contain the homologously recombined DNA by germline transmission of the transgene. Methods for constructing homologous recombination vectors and homologous recombinant animals are described further in Bradley (1991) *Current Opinion in Bio/Technology* 2:823-829 and in PCT Publication NOS. WO 90/11354, WO 91/01140, WO 92/0968, and WO 93/04169.

In another embodiment, transgenic non-human animals can be produced which contain selected systems which allow for regulated expression of the transgene. One example of such a system is the *cre/loxP* recombinase system of bacteriophage P1. For a description of the *cre/loxP* recombinase system, see, *e.g.*, Lakso *et al.* (1992) *Proc. Natl. Acad. Sci. USA* 89:6232-6236. Another example of a recombinase system is the FLP recombinase system of *Saccharomyces cerevisiae* (O'Gorman *et al.*, 1991, *Science* 251:1351-1355). If a *cre/loxP* recombinase system is used to regulate expression of the transgene, animals containing transgenes encoding both the *Cre* recombinase and a selected protein are required. Such animals can be provided through the construction of "double" transgenic animals, *e.g.*, by mating two transgenic animals, one containing a transgene encoding a selected protein and the other containing a transgene encoding a recombinase.

Clones of the non-human transgenic animals described herein can also be produced according to the methods described in Wilmut *et al.* (1997) *Nature* 385:810-813 and PCT Publication NOS. WO 97/07668 and WO 97/07669.

IV. Pharmaceutical Compositions

The nucleic acid molecules, polypeptides, and antibodies (also referred to herein as "active compounds") corresponding to a marker of the invention can be

incorporated into pharmaceutical compositions suitable for administration. Such compositions typically comprise the nucleic acid molecule, protein, or antibody and a pharmaceutically acceptable carrier. As used herein the language "pharmaceutically acceptable carrier" is intended to include any and all solvents, dispersion media, coatings, antibacterial and antifungal agents, isotonic and absorption delaying agents, and the like, compatible with pharmaceutical administration. The use of such media and agents for pharmaceutically active substances is well known in the art. Except insofar as any conventional media or agent is incompatible with the active compound, use thereof in the compositions is contemplated. Supplementary active compounds can also be incorporated into the compositions.

The invention includes methods for preparing pharmaceutical compositions for modulating the expression or activity of a polypeptide or nucleic acid corresponding to a marker of the invention. Such methods comprise formulating a pharmaceutically acceptable carrier with an agent which modulates expression or activity of a polypeptide or nucleic acid corresponding to a marker of the invention. Such compositions can further include additional active agents. Thus, the invention further includes methods for preparing a pharmaceutical composition by formulating a pharmaceutically acceptable carrier with an agent which modulates expression or activity of a polypeptide or nucleic acid corresponding to a marker of the invention and one or more additional active compounds.

The invention also provides methods (also referred to herein as "screening assays") for identifying modulators, *i.e.*, candidate or test compounds or agents (*e.g.*, peptides, peptidomimetics, peptoids, small molecules or other drugs) which (a) bind to the marker, or (b) have a modulatory (*e.g.*, stimulatory or inhibitory) effect on the activity of the marker or, more specifically, (c) have a modulatory effect on the interactions of the marker with one or more of its natural substrates (*e.g.*, peptide, protein, hormone, co-factor, or nucleic acid), or (d) have a modulatory effect on the expression of the marker. Such assays typically comprise a reaction between the marker and one or more assay components. The other components may be either the test compound itself, or a combination of test compound and a natural binding partner of the marker.

The test compounds of the present invention may be obtained from any available source, including systematic libraries of natural and/or synthetic compounds. Test compounds may also be obtained by any of the numerous approaches in combinatorial library methods known in the art, including: biological libraries; peptoid libraries (libraries of molecules having the functionalities of peptides, but with a novel, non-peptide backbone which are resistant to enzymatic degradation but which

nevertheless remain bioactive; see, *e.g.*, Zuckermann *et al.*, 1994, *J. Med. Chem.* 37:2678-85); spatially addressable parallel solid phase or solution phase libraries; synthetic library methods requiring deconvolution; the 'one-bead one-compound' library method; and synthetic library methods using affinity chromatography selection. The biological library and peptoid library approaches are limited to peptide libraries, while the other four approaches are applicable to peptide, non-peptide oligomer or small molecule libraries of compounds (Lam, 1997, *Anticancer Drug Des.* 12:145).

Examples of methods for the synthesis of molecular libraries can be found in the art, for example in: DeWitt *et al.* (1993) *Proc. Natl. Acad. Sci. U.S.A.* 90:6909; Erb *et al.* (1994) *Proc. Natl. Acad. Sci. USA* 91:11422; Zuckermann *et al.* (1994). *J. Med. Chem.* 37:2678; Cho *et al.* (1993) *Science* 261:1303; Carrell *et al.* (1994) *Angew. Chem. Int. Ed. Engl.* 33:2059; Carell *et al.* (1994) *Angew. Chem. Int. Ed. Engl.* 33:2061; and in Gallop *et al.* (1994) *J. Med. Chem.* 37:1233.

Libraries of compounds may be presented in solution (*e.g.*, Houghten, 1992, *Biotechniques* 13:412-421), or on beads (Lam, 1991, *Nature* 354:82-84), chips (Fodor, 1993, *Nature* 364:555-556), bacteria and/or spores, (Ladner, USP 5,223,409), plasmids (Cull *et al*, 1992, *Proc Natl Acad Sci USA* 89:1865-1869) or on phage (Scott and Smith, 1990, *Science* 249:386-390; Devlin, 1990, *Science* 249:404-406; Cwirla *et al*, 1990, *Proc. Natl. Acad. Sci.* 87:6378-6382; Felici, 1991, *J. Mol. Biol.* 222:301-310; Ladner, *supra.*).

In one embodiment, the invention provides assays for screening candidate or test compounds which are substrates of a marker or biologically active portion thereof. In another embodiment, the invention provides assays for screening candidate or test compounds which bind to a marker or biologically active portion thereof. Determining the ability of the test compound to directly bind to a marker can be accomplished, for example, by coupling the compound with a radioisotope or enzymatic label such that binding of the compound to the marker can be determined by detecting the labeled marker compound in a complex. For example, compounds (*e.g.*, marker substrates) can be labeled with ^{125}I, ^{35}S, ^{14}C, or ^{3}H, either directly or indirectly, and the radioisotope detected by direct counting of radioemission or by scintillation counting. Alternatively, assay components can be enzymatically labeled with, for example, horseradish peroxidase, alkaline phosphatase, or luciferase, and the enzymatic label detected by determination of conversion of an appropriate substrate to product.

In another embodiment, the invention provides assays for screening candidate or test compounds which modulate the activity of a marker or a biologically active portion thereof. In all likelihood, the marker can, *in vivo*, interact with one or more molecules, such as but not limited to, peptides, proteins, hormones, cofactors and

nucleic acids. For the purposes of this discussion, such cellular and extracellular molecules are referred to herein as "binding partners" or marker "substrate".

One necessary embodiment of the invention in order to facilitate such screening is the use of the marker to identify its natural *in vivo* binding partners. There are many ways to accomplish this which are known to one skilled in the art. One example is the use of the marker protein as "bait protein" in a two-hybrid assay or three-hybrid assay (see, *e.g.*, U.S. Patent No. 5,283,317; Zervos *et al*, 1993, *Cell* 72:223-232; Madura *et al*, 1993, *J. Biol. Chem.* 268:12046-12054; Bartel *et al* ,1993, *Biotechniques* 14:920-924; Iwabuchi *et al*, 1993 *Oncogene* 8:1693-1696; Brent WO94/10300) in order to identify other proteins which bind to or interact with the marker (binding partners) and, therefore, are possibly involved in the natural function of the marker. Such marker binding partners are also likely to be involved in the propagation of signals by the marker or downstream elements of a marker-mediated signaling pathway. Alternatively, such marker binding partners may also be found to be inhibitors of the marker.

The two-hybrid system is based on the modular nature of most transcription factors, which consist of separable DNA-binding and activation domains. Briefly, the assay utilizes two different DNA constructs. In one construct, the gene that encodes a marker protein fused to a gene encoding the DNA binding domain of a known transcription factor (*e.g.*, GAL-4). In the other construct, a DNA sequence, from a library of DNA sequences, that encodes an unidentified protein ("prey" or "sample") is fused to a gene that codes for the activation domain of the known transcription factor. If the "bait" and the "prey" proteins are able to interact, *in vivo,* forming a marker-dependent complex, the DNA-binding and activation domains of the transcription factor are brought into close proximity. This proximity allows transcription of a reporter gene (*e.g.*, LacZ) which is operably linked to a transcriptional regulatory site responsive to the transcription factor. Expression of the reporter gene can be readily detected and cell colonies containing the functional transcription factor can be isolated and used to obtain the cloned gene which encodes the protein which interacts with the marker protein.

In a further embodiment, assays may be devised through the use of the invention for the purpose of identifying compounds which modulate (*e.g.*, affect either positively or negatively) interactions between a marker and its substrates and/or binding partners. Such compounds can include, but are not limited to, molecules such as antibodies, peptides, hormones, oligonucleotides, nucleic acids, and analogs thereof. Such compounds may also be obtained from any available source, including systematic libraries of natural and/or synthetic compounds. The preferred assay components for use in this embodiment is an cervical cancer marker identified herein, the known binding

partner and/or substrate of same, and the test compound. Test compounds can be supplied from any source.

The basic principle of the assay systems used to identify compounds that interfere with the interaction between the marker and its binding partner involves preparing a reaction mixture containing the marker and its binding partner under conditions and for a time sufficient to allow the two products to interact and bind, thus forming a complex. In order to test an agent for inhibitory activity, the reaction mixture is prepared in the presence and absence of the test compound. The test compound can be initially included in the reaction mixture, or can be added at a time subsequent to the addition of the marker and its binding partner. Control reaction mixtures are incubated without the test compound or with a placebo. The formation of any complexes between the marker and its binding partner is then detected. The formation of a complex in the control reaction, but less or no such formation in the reaction mixture containing the test compound, indicates that the compound interferes with the interaction of the marker and its binding partner. Conversely, the formation of more complex in the presence of compound than in the control reaction indicates that the compound may enhance interaction of the marker and its binding partner.

The assay for compounds that interfere with the interaction of the marker with its binding partner may be conducted in a heterogeneous or homogeneous format. Heterogeneous assays involve anchoring either the marker or its binding partner onto a solid phase and detecting complexes anchored to the solid phase at the end of the reaction. In homogeneous assays, the entire reaction is carried out in a liquid phase. In either approach, the order of addition of reactants can be varied to obtain different information about the compounds being tested. For example, test compounds that interfere with the interaction between the markers and the binding partners (*e.g.,* by competition) can be identified by conducting the reaction in the presence of the test substance, *i.e.,* by adding the test substance to the reaction mixture prior to or simultaneously with the marker and its interactive binding partner. Alternatively, test compounds that disrupt preformed complexes, *e.g.,* compounds with higher binding constants that displace one of the components from the complex, can be tested by adding the test compound to the reaction mixture after complexes have been formed. The various formats are briefly described below.

In a heterogeneous assay system, either the marker or its binding partner is anchored onto a solid surface or matrix, while the other corresponding non-anchored component may be labeled, either directly or indirectly. In practice, microtitre plates are often utilized for this approach. The anchored species can be immobilized by a number of methods, either non-covalent or covalent, that are typically well known to one who

practices the art. Non-covalent attachment can often be accomplished simply by coating the solid surface with a solution of the marker or its binding partner and drying. Alternatively, an immobilized antibody specific for the assay component to be anchored can be used for this purpose. Such surfaces can often be prepared in advance and stored.

In related embodiments, a fusion protein can be provided which adds a domain that allows one or both of the assay components to be anchored to a matrix. For example, glutathione-S-transferase/marker fusion proteins or glutathione-S-transferase/binding partner can be adsorbed onto glutathione sepharose beads (Sigma Chemical, St. Louis, MO) or glutathione derivatized microtiter plates, which are then combined with the test compound or the test compound and either the non-adsorbed marker or its binding partner, and the mixture incubated under conditions conducive to complex formation (*e.g.*, physiological conditions). Following incubation, the beads or microtiter plate wells are washed to remove any unbound assay components, the immobilized complex assessed either directly or indirectly, for example, as described above. Alternatively, the complexes can be dissociated from the matrix, and the level of marker binding or activity determined using standard techniques.

Other techniques for immobilizing proteins on matrices can also be used in the screening assays of the invention. For example, either a marker or a marker binding partner can be immobilized utilizing conjugation of biotin and streptavidin. Biotinylated marker protein or target molecules can be prepared from biotin-NHS (N-hydroxy-succinimide) using techniques known in the art (*e.g.*, biotinylation kit, Pierce Chemicals, Rockford, IL), and immobilized in the wells of streptavidin-coated 96 well plates (Pierce Chemical). In certain embodiments, the protein-immobilized surfaces can be prepared in advance and stored.

In order to conduct the assay, the corresponding partner of the immobilized assay component is exposed to the coated surface with or without the test compound. After the reaction is complete, unreacted assay components are removed (*e.g.*, by washing) and any complexes formed will remain immobilized on the solid surface. The detection of complexes anchored on the solid surface can be accomplished in a number of ways. Where the non-immobilized component is pre-labeled, the detection of label immobilized on the surface indicates that complexes were formed. Where the non-immobilized component is not pre-labeled, an indirect label can be used to detect complexes anchored on the surface; *e.g.*, using a labeled antibody specific for the initially non-immobilized species (the antibody, in turn, can be directly labeled or indirectly labeled with, *e.g.*, a labeled anti-Ig antibody). Depending upon the order of addition of reaction components, test compounds which modulate (inhibit or enhance) complex formation or which disrupt preformed complexes can be detected.

In an alternate embodiment of the invention, a homogeneous assay may be used. This is typically a reaction, analogous to those mentioned above, which is conducted in a liquid phase in the presence or absence of the test compound. The formed complexes are then separated from unreacted components, and the amount of complex formed is determined. As mentioned for heterogeneous assay systems, the order of addition of reactants to the liquid phase can yield information about which test compounds modulate (inhibit or enhance) complex formation and which disrupt preformed complexes.

In such a homogeneous assay, the reaction products may be separated from unreacted assay components by any of a number of standard techniques, including but not limited to: differential centrifugation, chromatography, electrophoresis and immunoprecipitation. In differential centrifugation, complexes of molecules may be separated from uncomplexed molecules through a series of centrifugal steps, due to the different sedimentation equilibria of complexes based on their different sizes and densities (see, for example, Rivas, G., and Minton, A.P., *Trends Biochem Sci* 1993 Aug;18(8):284-7). Standard chromatographic techniques may also be utilized to separate complexed molecules from uncomplexed ones. For example, gel filtration chromatography separates molecules based on size, and through the utilization of an appropriate gel filtration resin in a column format, for example, the relatively larger complex may be separated from the relatively smaller uncomplexed components. Similarly, the relatively different charge properties of the complex as compared to the uncomplexed molecules may be exploited to differentially separate the complex from the remaining individual reactants, for example through the use of ion-exchange chromatography resins. Such resins and chromatographic techniques are well known to one skilled in the art (see, *e.g.*, Heegaard, 1998, *J Mol. Recognit.* 11:141-148; Hage and Tweed, 1997, *J. Chromatogr. B. Biomed. Sci. Appl.*, 699:499-525). Gel electrophoresis may also be employed to separate complexed molecules from unbound species (see, *e.g.*, Ausubel *et al* (eds.), In: Current Protocols in Molecular Biology, J. Wiley & Sons, New York. 1999). In this technique, protein or nucleic acid complexes are separated based on size or charge, for example. In order to maintain the binding interaction during the electrophoretic process, nondenaturing gels in the absence of reducing agent are typically preferred, but conditions appropriate to the particular interactants will be well known to one skilled in the art. Immunoprecipitation is another common technique utilized for the isolation of a protein-protein complex from solution (see, *e.g.*, Ausubel *et al* (eds.), In: Current Protocols in Molecular Biology, J. Wiley & Sons, New York. 1999). In this technique, all proteins binding to an antibody specific to one of the binding molecules are precipitated from solution by conjugating the antibody to a

polymer bead that may be readily collected by centrifugation. The bound assay components are released from the beads (through a specific proteolysis event or other technique well known in the art which will not disturb the protein-protein interaction in the complex), and a second immunoprecipitation step is performed, this time utilizing antibodies specific for the correspondingly different interacting assay component. In this manner, only formed complexes should remain attached to the beads. Variations in complex formation in both the presence and the absence of a test compound can be compared, thus offering information about the ability of the compound to modulate interactions between the marker and its binding partner.

Also within the scope of the present invention are methods for direct detection of interactions between the marker and its natural binding partner and/or a test compound in a homogeneous or heterogeneous assay system without further sample manipulation. For example, the technique of fluorescence energy transfer may be utilized (see, *e.g.*, Lakowicz *et al*, U.S. Patent No. 5,631,169; Stavrianopoulos *et al*, U.S. Patent No. 4,868,103). Generally, this technique involves the addition of a fluorophore label on a first 'donor' molecule (*e.g.*, marker or test compound) such that its emitted fluorescent energy will be absorbed by a fluorescent label on a second, 'acceptor' molecule (*e.g.*, marker or test compound), which in turn is able to fluoresce due to the absorbed energy. Alternately, the 'donor' protein molecule may simply utilize the natural fluorescent energy of tryptophan residues. Labels are chosen that emit different wavelengths of light, such that the 'acceptor' molecule label may be differentiated from that of the 'donor'. Since the efficiency of energy transfer between the labels is related to the distance separating the molecules, spatial relationships between the molecules can be assessed. In a situation in which binding occurs between the molecules, the fluorescent emission of the 'acceptor' molecule label in the assay should be maximal. An FET binding event can be conveniently measured through standard fluorometric detection means well known in the art (*e.g.*, using a fluorimeter). A test substance which either enhances or hinders participation of one of the species in the preformed complex will result in the generation of a signal variant to that of background. In this way, test substances that modulate interactions between a marker and its binding partner can be identified in controlled assays.

In another embodiment, modulators of marker expression are identified in a method wherein a cell is contacted with a candidate compound and the expression of mRNA or protein, corresponding to a marker in the cell, is determined. The level of expression of mRNA or protein in the presence of the candidate compound is compared to the level of expression of mRNA or protein in the absence of the candidate compound. The candidate compound can then be identified as a modulator of marker

expression based on this comparison. For example, when expression of marker mRNA or protein is greater (statistically significantly greater) in the presence of the candidate compound than in its absence, the candidate compound is identified as a stimulator of marker mRNA or protein expression. Conversely, when expression of marker mRNA or protein is less (statistically significantly less) in the presence of the candidate compound than in its absence, the candidate compound is identified as an inhibitor of marker mRNA or protein expression. The level of marker mRNA or protein expression in the cells can be determined by methods described herein for detecting marker mRNA or protein.

In another aspect, the invention pertains to a combination of two or more of the assays described herein. For example, a modulating agent can be identified using a cell-based or a cell free assay, and the ability of the agent to modulate the activity of a marker protein can be further confirmed *in vivo, e.g.,* in a whole animal model for cellular transformation and/or tumorigenesis.

This invention further pertains to novel agents identified by the above-described screening assays. Accordingly, it is within the scope of this invention to further use an agent identified as described herein in an appropriate animal model. For example, an agent identified as described herein (*e.g.,* an marker modulating agent, an antisense marker nucleic acid molecule, an marker-specific antibody, or an marker-binding partner) can be used in an animal model to determine the efficacy, toxicity, or side effects of treatment with such an agent. Alternatively, an agent identified as described herein can be used in an animal model to determine the mechanism of action of such an agent. Furthermore, this invention pertains to uses of novel agents identified by the above-described screening assays for treatments as described herein.

It is understood that appropriate doses of small molecule agents and protein or polypeptide agents depends upon a number of factors within the knowledge of the ordinarily skilled physician, veterinarian, or researcher. The dose(s) of these agents will vary, for example, depending upon the identity, size, and condition of the subject or sample being treated, further depending upon the route by which the composition is to be administered, if applicable, and the effect which the practitioner desires the agent to have upon the nucleic acid or polypeptide of the invention. Exemplary doses of a small molecule include milligram or microgram amounts per kilogram of subject or sample weight (*e.g.* about 1 microgram per kilogram to about 500 milligrams per kilogram, about 100 micrograms per kilogram to about 5 milligrams per kilogram, or about 1 microgram per kilogram to about 50 micrograms per kilogram). Exemplary doses of a protein or polypeptide include gram, milligram or microgram amounts per kilogram of subject or sample weight (*e.g.* about 1 microgram per kilogram to about 5 grams per

kilogram, about 100 micrograms per kilogram to about 500 milligrams per kilogram, or about 1 milligram per kilogram to about 50 milligrams per kilogram). It is furthermore understood that appropriate doses of one of these agents depend upon the potency of the agent with respect to the expression or activity to be modulated. Such appropriate doses can be determined using the assays described herein. When one or more of these agents is to be administered to an animal (*e.g.* a human) in order to modulate expression or activity of a polypeptide or nucleic acid of the invention, a physician, veterinarian, or researcher can, for example, prescribe a relatively low dose at first, subsequently increasing the dose until an appropriate response is obtained. In addition, it is understood that the specific dose level for any particular animal subject will depend upon a variety of factors including the activity of the specific agent employed, the age, body weight, general health, gender, and diet of the subject, the time of administration, the route of administration, the rate of excretion, any drug combination, and the degree of expression or activity to be modulated.

A pharmaceutical composition of the invention is formulated to be compatible with its intended route of administration. Examples of routes of administration include parenteral, *e.g.*, intravenous, intradermal, subcutaneous, oral (*e.g.*, inhalation), transdermal (topical), transmucosal, and rectal administration. Solutions or suspensions used for parenteral, intradermal, or subcutaneous application can include the following components: a sterile diluent such as water for injection, saline solution, fixed oils, polyethylene glycols, glycerine, propylene glycol or other synthetic solvents; antibacterial agents such as benzyl alcohol or methyl parabens; antioxidants such as ascorbic acid or sodium bisulfite; chelating agents such as ethylenediamine-tetraacetic acid; buffers such as acetates, citrates or phosphates and agents for the adjustment of tonicity such as sodium chloride or dextrose. pH can be adjusted with acids or bases, such as hydrochloric acid or sodium hydroxide. The parenteral preparation can be enclosed in ampules, disposable syringes or multiple dose vials made of glass or plastic.

Pharmaceutical compositions suitable for injectable use include sterile aqueous solutions (where water soluble) or dispersions and sterile powders for the extemporaneous preparation of sterile injectable solutions or dispersions. For intravenous administration, suitable carriers include physiological saline, bacteriostatic water, Cremophor EL (BASF; Parsippany, NJ) or phosphate buffered saline (PBS). In all cases, the composition must be sterile and should be fluid to the extent that easy syringability exists. It must be stable under the conditions of manufacture and storage and must be preserved against the contaminating action of microorganisms such as bacteria and fungi. The carrier can be a solvent or dispersion medium containing, for

example, water, ethanol, polyol (for example, glycerol, propylene glycol, and liquid polyethylene glycol, and the like), and suitable mixtures thereof. The proper fluidity can be maintained, for example, by the use of a coating such as lecithin, by the maintenance of the required particle size in the case of dispersion and by the use of surfactants. Prevention of the action of microorganisms can be achieved by various antibacterial and antifungal agents, for example, parabens, chlorobutanol, phenol, ascorbic acid, thimerosal, and the like. In many cases, it will be preferable to include isotonic agents, for example, sugars, polyalcohols such as mannitol, sorbitol, or sodium chloride in the composition. Prolonged absorption of the injectable compositions can be brought about by including in the composition an agent which delays absorption, for example, aluminum monostearate and gelatin.

Sterile injectable solutions can be prepared by incorporating the active compound (*e.g.*, a polypeptide or antibody) in the required amount in an appropriate solvent with one or a combination of ingredients enumerated above, as required, followed by filtered sterilization. Generally, dispersions are prepared by incorporating the active compound into a sterile vehicle which contains a basic dispersion medium, and then incorporating the required other ingredients from those enumerated above. In the case of sterile powders for the preparation of sterile injectable solutions, the preferred methods of preparation are vacuum drying and freeze-drying which yields a powder of the active ingredient plus any additional desired ingredient from a previously sterile-filtered solution thereof.

Oral compositions generally include an inert diluent or an edible carrier. They can be enclosed in gelatin capsules or compressed into tablets. For the purpose of oral therapeutic administration, the active compound can be incorporated with excipients and used in the form of tablets, troches, or capsules. Oral compositions can also be prepared using a fluid carrier for use as a mouthwash, wherein the compound in the fluid carrier is applied orally and swished and expectorated or swallowed.

Pharmaceutically compatible binding agents, and/or adjuvant materials can be included as part of the composition. The tablets, pills, capsules, troches, and the like can contain any of the following ingredients, or compounds of a similar nature: a binder such as microcrystalline cellulose, gum tragacanth or gelatin; an excipient such as starch or lactose, a disintegrating agent such as alginic acid, Primogel, or corn starch; a lubricant such as magnesium stearate or Sterotes; a glidant such as colloidal silicon dioxide; a sweetening agent such as sucrose or saccharin; or a flavoring agent such as peppermint, methyl salicylate, or orange flavoring.

For administration by inhalation, the compounds are delivered in the form of an aerosol spray from a pressurized container or dispenser which contains a suitable propellant, *e.g.*, a gas such as carbon dioxide, or a nebulizer.

Systemic administration can also be by transmucosal or transdermal means. For transmucosal or transdermal administration, penetrants appropriate to the barrier to be permeated are used in the formulation. Such penetrants are generally known in the art, and include, for example, for transmucosal administration, detergents, bile salts, and fusidic acid derivatives. Transmucosal administration can be accomplished through the use of nasal sprays or suppositories. For transdermal administration, the active compounds are formulated into ointments, salves, gels, or creams as generally known in the art.

The compounds can also be prepared in the form of suppositories (*e.g.*, with conventional suppository bases such as cocoa butter and other glycerides) or retention enemas for rectal delivery.

In one embodiment, the active compounds are prepared with carriers that will protect the compound against rapid elimination from the body, such as a controlled release formulation, including implants and microencapsulated delivery systems. Biodegradable, biocompatible polymers can be used, such as ethylene vinyl acetate, polyanhydrides, polyglycolic acid, collagen, polyorthoesters, and polylactic acid. Methods for preparation of such formulations will be apparent to those skilled in the art. The materials can also be obtained commercially from Alza Corporation and Nova Pharmaceuticals, Inc. Liposomal suspensions (including liposomes having monoclonal antibodies incorporated therein or thereon) can also be used as pharmaceutically acceptable carriers. These can be prepared according to methods known to those skilled in the art, for example, as described in U.S. Patent No. 4,522,811.

It is especially advantageous to formulate oral or parenteral compositions in dosage unit form for ease of administration and uniformity of dosage. Dosage unit form as used herein refers to physically discrete units suited as unitary dosages for the subject to be treated; each unit containing a predetermined quantity of active compound calculated to produce the desired therapeutic effect in association with the required pharmaceutical carrier. The specification for the dosage unit forms of the invention are dictated by and directly dependent on the unique characteristics of the active compound and the particular therapeutic effect to be achieved, and the limitations inherent in the art of compounding such an active compound for the treatment of individuals.

For antibodies, the preferred dosage is 0.1 mg/kg to 100 mg/kg of body weight (generally 10 mg/kg to 20 mg/kg). If the antibody is to act in the brain, a dosage of 50 mg/kg to 100 mg/kg is usually appropriate. Generally, partially human antibodies

and fully human antibodies have a longer half-life within the human body than other antibodies. Accordingly, lower dosages and less frequent administration is often possible. Modifications such as lipidation can be used to stabilize antibodies and to enhance uptake and tissue penetration (*e.g.*, into the cervical epithelium). A method for lipidation of antibodies is described by Cruikshank *et al.* (1997) *J. Acquired Immune Deficiency Syndromes and Human Retrovirology* 14:193.

The nucleic acid molecules corresponding to a marker of the invention can be inserted into vectors and used as gene therapy vectors. Gene therapy vectors can be delivered to a subject by, for example, intravenous injection, local administration (U.S. Patent 5,328,470), or by stereotactic injection (see, *e.g.*, Chen *et al.*, 1994, *Proc. Natl. Acad. Sci. USA* 91:3054-3057). The pharmaceutical preparation of the gene therapy vector can include the gene therapy vector in an acceptable diluent, or can comprise a slow release matrix in which the gene delivery vehicle is imbedded. Alternatively, where the complete gene delivery vector can be produced intact from recombinant cells, *e.g.* retroviral vectors, the pharmaceutical preparation can include one or more cells which produce the gene delivery system.

The pharmaceutical compositions can be included in a container, pack, or dispenser together with instructions for administration.

V. Computer Readable Means and Arrays

Computer readable media comprising a marker(s) of the present invention is also provided. As used herein, "computer readable media" refers to any medium that can be read and accessed directly by a computer. Such media include, but are not limited to: magnetic storage media, such as floppy discs, hard disc storage medium, and magnetic tape; optical storage media such as CD-ROM; electrical storage media such as RAM and ROM; and hybrids of these categories such as magnetic/optical storage media. The skilled artisan will readily appreciate how any of the presently known computer readable mediums can be used to create a manufacture comprising computer readable medium having recorded thereon a marker of the present invention.

As used herein, "recorded" refers to a process for storing information on computer readable medium. Those skilled in the art can readily adopt any of the presently known methods for recording information on computer readable medium to generate manufactures comprising the markers of the present invention.

A variety of data processor programs and formats can be used to store the marker information of the present invention on computer readable medium. For example, the nucleic acid sequence corresponding to the markers can be represented in a word processing text file, formatted in commercially-available software such as

WordPerfect and MicroSoft Word, or represented in the form of an ASCII file, stored in a database application, such as DB2, Sybase, Oracle, or the like. Any number of dataprocessor structuring formats (*e.g.*, text file or database) may be adapted in order to obtain computer readable medium having recorded thereon the markers of the present invention.

By providing the markers of the invention in computer readable form, one can routinely access the marker sequence information for a variety of purposes. For example, one skilled in the art can use the nucleotide or amino acid sequences of the invention in computer readable form to compare a target sequence or target structural motif with the sequence information stored within the data storage means. Search means are used to identify fragments or regions of the sequences of the invention which match a particular target sequence or target motif.

The invention also includes an array comprising a marker(s) of the present invention. The array can be used to assay expression of one or more genes in the array. In one embodiment, the array can be used to assay gene expression in a tissue to ascertain tissue specificity of genes in the array. This allows a profile to be developed showing a battery of genes specifically expressed in one or more tissues.

In addition to such qualitative determination, the invention allows the quantitation of gene expression. Thus, not only tissue specificity, but also the level of expression of a battery of genes in the tissue is ascertainable. Thus, genes can be grouped on the basis of their tissue expression *per se* and level of expression in that tissue. This is useful, for example, in ascertaining the relationship of gene expression between or among tissues. Thus, one tissue can be perturbed and the effect on gene expression in a second tissue can be determined. In this context, the effect of one cell type on another cell type in response to a biological stimulus can be determined. Such a determination is useful, for example, to know the effect of cell-cell interaction at the level of gene expression. If an agent is administered therapeutically to treat one cell type but has an undesirable effect on another cell type, the invention provides an assay to determine the molecular basis of the undesirable effect and thus provides the opportunity to co-administer a counteracting agent or otherwise treat the undesired effect. Similarly, even within a single cell type, undesirable biological effects can be determined at the molecular level. Thus, the effects of an agent on expression of other than the target gene can be ascertained and counteracted.

In another embodiment, the array can be used to monitor the time course of expression of one or more genes in the array. This can occur in various biological contexts, as disclosed herein, for example development and differentiation, tumor progression, progression of other diseases, *in vitro* processes, such a cellular

transformation and senescence, autonomic neural and neurological processes, such as, for example, pain and appetite, and cognitive functions, such as learning or memory.

The array is also useful for ascertaining the effect of the expression of a gene on the expression of other genes in the same cell or in different cells. This provides, for example, for a selection of alternate molecular targets for therapeutic intervention if the ultimate or downstream target cannot be regulated.

The array is also useful for ascertaining differential expression patterns of one or more genes in normal and abnormal cells. This provides a battery of genes that could serve as a molecular target for diagnosis or therapeutic intervention.

VI. Predictive Medicine

The present invention pertains to the field of predictive medicine in which diagnostic assays, prognostic assays, pharmacogenomics, and monitoring clinical trails are used for prognostic (predictive) purposes to thereby treat an individual prophylactically. Accordingly, one aspect of the present invention relates to diagnostic assays for determining the level of expression of polypeptides or nucleic acids corresponding to one or more markers of the invention, in order to determine whether an individual is at risk of developing cervical cancer. Such assays can be used for prognostic or predictive purposes to thereby prophylactically treat an individual prior to the onset of the cancer.

Yet another aspect of the invention pertains to monitoring the influence of agents (*e.g.*, drugs or other compounds administered either to inhibit cervical cancer or to treat or prevent any other disorder {*i.e.* in order to understand any cervical carcinogenic effects that such treatment may have}) on the expression or activity of a marker of the invention in clinical trials. These and other agents are described in further detail in the following sections.

A. Diagnostic Assays

An exemplary method for detecting the presence or absence of a polypeptide or nucleic acid corresponding to a marker of the invention in a biological sample involves obtaining a biological sample (*e.g.* a cervical smear) from a test subject and contacting the biological sample with a compound or an agent capable of detecting the polypeptide or nucleic acid (*e.g.*, mRNA, genomic DNA, or cDNA). The detection methods of the invention can thus be used to detect mRNA, protein, cDNA, or genomic DNA, for example, in a biological sample *in vitro* as well as *in vivo*. For example, *in vitro* techniques for detection of mRNA include Northern hybridizations and *in situ* hybridizations. *In vitro* techniques for detection of a polypeptide corresponding to a

marker of the invention include enzyme linked immunosorbent assays (ELISAs), Western blots, immunoprecipitations, immunohistochemistry and immunofluorescence. *In vitro* techniques for detection of genomic DNA include Southern hybridizations. Furthermore, *in vivo* techniques for detection of a polypeptide corresponding to a marker of the invention include introducing into a subject a labeled antibody directed against the polypeptide. For example, the antibody can be labeled with a radioactive marker whose presence and location in a subject can be detected by standard imaging techniques.

A general principle of such diagnostic and prognostic assays involves preparing a sample or reaction mixture that may contain a marker, and a probe, under appropriate conditions and for a time sufficient to allow the marker and probe to interact and bind, thus forming a complex that can be removed and/or detected in the reaction mixture. These assays can be conducted in a variety of ways.

For example, one method to conduct such an assay would involve anchoring the marker or probe onto a solid phase support, also referred to as a substrate, and detecting target marker/probe complexes anchored on the solid phase at the end of the reaction. In one embodiment of such a method, a sample from a subject, which is to be assayed for presence and/or concentration of marker, can be anchored onto a carrier or solid phase support. In another embodiment, the reverse situation is possible, in which the probe can be anchored to a solid phase and a sample from a subject can be allowed to react as an unanchored component of the assay.

There are many established methods for anchoring assay components to a solid phase. These include, without limitation, marker or probe molecules which are immobilized through conjugation of biotin and streptavidin. Such biotinylated assay components can be prepared from biotin-NHS (N-hydroxy-succinimide) using techniques known in the art (*e.g.*, biotinylation kit, Pierce Chemicals, Rockford, IL), and immobilized in the wells of streptavidin-coated 96 well plates (Pierce Chemical). In certain embodiments, the surfaces with immobilized assay components can be prepared in advance and stored.

Other suitable carriers or solid phase supports for such assays include any material capable of binding the class of molecule to which the marker or probe belongs. Well-known supports or carriers include, but are not limited to, glass, polystyrene, nylon, polypropylene, nylon, polyethylene, dextran, amylases, natural and modified celluloses, polyacrylamides, gabbros, and magnetite.

In order to conduct assays with the above mentioned approaches, the non-immobilized component is added to the solid phase upon which the second component is anchored. After the reaction is complete, uncomplexed components may be removed (*e.g.*, by washing) under conditions such that any complexes formed will

remain immobilized upon the solid phase. The detection of marker/probe complexes anchored to the solid phase can be accomplished in a number of methods outlined herein.

In a preferred embodiment, the probe, when it is the unanchored assay component, can be labeled for the purpose of detection and readout of the assay, either directly or indirectly, with detectable labels discussed herein and which are well-known to one skilled in the art.

It is also possible to directly detect marker/probe complex formation without further manipulation or labeling of either component (marker or probe), for example by utilizing the technique of fluorescence energy transfer (see, for example, Lakowicz *et al.*, U.S. Patent No. 5,631,169; Stavrianopoulos, *et al.*, U.S. Patent No. 4,868,103). A fluorophore label on the first, 'donor' molecule is selected such that, upon excitation with incident light of appropriate wavelength, its emitted fluorescent energy will be absorbed by a fluorescent label on a second 'acceptor' molecule, which in turn is able to fluoresce due to the absorbed energy. Alternately, the 'donor' protein molecule may simply utilize the natural fluorescent energy of tryptophan residues. Labels are chosen that emit different wavelengths of light, such that the 'acceptor' molecule label may be differentiated from that of the 'donor'. Since the efficiency of energy transfer between the labels is related to the distance separating the molecules, spatial relationships between the molecules can be assessed. In a situation in which binding occurs between the molecules, the fluorescent emission of the 'acceptor' molecule label in the assay should be maximal. An FET binding event can be conveniently measured through standard fluorometric detection means well known in the art (*e.g.*, using a fluorimeter).

In another embodiment, determination of the ability of a probe to recognize a marker can be accomplished without labeling either assay component (probe or marker) by utilizing a technology such as real-time Biomolecular Interaction Analysis (BIA) (see, *e.g.*, Sjolander, S. and Urbaniczky, C., 1991, *Anal. Chem.* 63:2338-2345 and Szabo *et al.*, 1995, *Curr. Opin. Struct. Biol.* 5:699-705). As used herein, "BIA" or "surface plasmon resonance" is a technology for studying biospecific interactions in real time, without labeling any of the interactants (*e.g.*, BIAcore). Changes in the mass at the binding surface (indicative of a binding event) result in alterations of the refractive index of light near the surface (the optical phenomenon of surface plasmon resonance (SPR)), resulting in a detectable signal which can be used as an indication of real-time reactions between biological molecules.

Alternatively, in another embodiment, analogous diagnostic and prognostic assays can be conducted with marker and probe as solutes in a liquid phase.

In such an assay, the complexed marker and probe are separated from uncomplexed components by any of a number of standard techniques, including but not limited to: differential centrifugation, chromatography, electrophoresis and immunoprecipitation. In differential centrifugation, marker/probe complexes may be separated from uncomplexed assay components through a series of centrifugal steps, due to the different sedimentation equilibria of complexes based on their different sizes and densities (see, for example, Rivas, G., and Minton, A.P., 1993, *Trends Biochem Sci.* 18(8):284-7). Standard chromatographic techniques may also be utilized to separate complexed molecules from uncomplexed ones. For example, gel filtration chromatography separates molecules based on size, and through the utilization of an appropriate gel filtration resin in a column format, for example, the relatively larger complex may be separated from the relatively smaller uncomplexed components. Similarly, the relatively different charge properties of the marker/probe complex as compared to the uncomplexed components may be exploited to differentiate the complex from uncomplexed components, for example through the utilization of ion-exchange chromatography resins. Such resins and chromatographic techniques are well known to one skilled in the art (see, *e.g.*, Heegaard, N.H., 1998, *J. Mol. Recognit.* Winter 11(1-6):141-8; Hage, D.S., and Tweed, S.A. *J Chromatogr B Biomed Sci Appl* 1997 Oct 10;699(1-2):499-525). Gel electrophoresis may also be employed to separate complexed assay components from unbound components (see, *e.g.*, Ausubel *et al.*, ed., *Current Protocols in Molecular Biology*, John Wiley & Sons, New York, 1987-1999). In this technique, protein or nucleic acid complexes are separated based on size or charge, for example. In order to maintain the binding interaction during the electrophoretic process, non-denaturing gel matrix materials and conditions in the absence of reducing agent are typically preferred. Appropriate conditions to the particular assay and components thereof will be well known to one skilled in the art.

In a particular embodiment, the level of mRNA corresponding to the marker can be determined both by *in situ* and by *in vitro* formats in a biological sample using methods known in the art. The term "biological sample" is intended to include tissues, cells, biological fluids and isolates thereof, isolated from a subject, as well as tissues, cells and fluids present within a subject. Many expression detection methods use isolated RNA. For *in vitro* methods, any RNA isolation technique that does not select against the isolation of mRNA can be utilized for the purification of RNA from cervical cells (see, *e.g.*, Ausubel *et al.*, ed., *Current Protocols in Molecular Biology*, John Wiley & Sons, New York 1987-1999). Additionally, large numbers of tissue samples can readily be processed using techniques well known to those of skill in the

art, such as, for example, the single-step RNA isolation process of Chomczynski (1989, U.S. Patent No. 4,843,155).

The isolated mRNA can be used in hybridization or amplification assays that include, but are not limited to, Southern or Northern analyses, polymerase chain reaction analyses and probe arrays. One preferred diagnostic method for the detection of mRNA levels involves contacting the isolated mRNA with a nucleic acid molecule (probe) that can hybridize to the mRNA encoded by the gene being detected. The nucleic acid probe can be, for example, a full-length cDNA, or a portion thereof, such as an oligonucleotide of at least 7, 15, 30, 50, 100, 250 or 500 nucleotides in length and sufficient to specifically hybridize under stringent conditions to a mRNA or genomic DNA encoding a marker of the present invention. Other suitable probes for use in the diagnostic assays of the invention are described herein. Hybridization of an mRNA with the probe indicates that the marker in question is being expressed.

In one format, the mRNA is immobilized on a solid surface and contacted with a probe, for example by running the isolated mRNA on an agarose gel and transferring the mRNA from the gel to a membrane, such as nitrocellulose. In an alternative format, the probe(s) are immobilized on a solid surface and the mRNA is contacted with the probe(s), for example, in an Affymetrix gene chip array. A skilled artisan can readily adapt known mRNA detection methods for use in detecting the level of mRNA encoded by the markers of the present invention.

An alternative method for determining the level of mRNA corresponding to a marker of the present invention in a sample involves the process of nucleic acid amplification, *e.g.*, by rtPCR (the experimental embodiment set forth in Mullis, 1987, U.S. Patent No. 4,683,202), ligase chain reaction (Barany, 1991, *Proc. Natl. Acad. Sci. USA,* 88:189-193), self sustained sequence replication (Guatelli *et al.*, 1990, *Proc. Natl. Acad. Sci. USA* 87:1874-1878), transcriptional amplification system (Kwoh *et al.*, 1989, *Proc. Natl. Acad. Sci. USA* 86:1173-1177), Q-Beta Replicase (Lizardi *et al.*, 1988, *Bio/Technology* 6:1197), rolling circle replication (Lizardi *et al.*, U.S. Patent No. 5,854,033) or any other nucleic acid amplification method, followed by the detection of the amplified molecules using techniques well known to those of skill in the art. These detection schemes are especially useful for the detection of nucleic acid molecules if such molecules are present in very low numbers. As used herein, amplification primers are defined as being a pair of nucleic acid molecules that can anneal to 5' or 3' regions of a gene (plus and minus strands, respectively, or vice-versa) and contain a short region in between. In general, amplification primers are from about 10 to 30 nucleotides in length and flank a region from about 50 to 200 nucleotides in length. Under appropriate

conditions and with appropriate reagents, such primers permit the amplification of a nucleic acid molecule comprising the nucleotide sequence flanked by the primers.

For *in situ* methods, mRNA does not need to be isolated from the cervical cells prior to detection. In such methods, a cell or tissue sample is prepared/processed using known histological methods. The sample is then immobilized on a support, typically a glass slide, and then contacted with a probe that can hybridize to mRNA that encodes the marker.

As an alternative to making determinations based on the absolute expression level of the marker, determinations may be based on the normalized expression level of the marker. Expression levels are normalized by correcting the absolute expression level of a marker by comparing its expression to the expression of a gene that is not a marker, *e.g.*, a housekeeping gene that is constitutively expressed. Suitable genes for normalization include housekeeping genes such as the actin gene, or epithelial cell-specific genes. This normalization allows the comparison of the expression level in one sample, *e.g.*, a patient sample, to another sample, *e.g.*, a non-cervical cancer sample, or between samples from different sources.

Alternatively, the expression level can be provided as a relative expression level. To determine a relative expression level of a marker, the level of expression of the marker is determined for 10 or more samples of normal versus cancer cell isolates, preferably 50 or more samples, prior to the determination of the expression level for the sample in question. The mean expression level of each of the genes assayed in the larger number of samples is determined and this is used as a baseline expression level for the marker. The expression level of the marker determined for the test sample (absolute level of expression) is then divided by the mean expression value obtained for that marker. This provides a relative expression level.

Preferably, the samples used in the baseline determination will be from cervical cancer or from non-cervical cancer cells of cervical tissue. The choice of the cell source is dependent on the use of the relative expression level. Using expression found in normal tissues as a mean expression score aids in validating whether the marker assayed is cervical specific (versus normal cells). In addition, as more data is accumulated, the mean expression value can be revised, providing improved relative expression values based on accumulated data. Expression data from cervical cells provides a means for grading the severity of the cervical cancer state.

In another embodiment of the present invention, a polypeptide corresponding to a marker is detected. A preferred agent for detecting a polypeptide of the invention is an antibody capable of binding to a polypeptide corresponding to a marker of the invention, preferably an antibody with a detectable label. Antibodies can

be polyclonal, or more preferably, monoclonal. An intact antibody, or a fragment thereof (*e.g.*, Fab or $F(ab')_2$) can be used. The term "labeled", with regard to the probe or antibody, is intended to encompass direct labeling of the probe or antibody by coupling (*i.e.*, physically linking) a detectable substance to the probe or antibody, as well as indirect labeling of the probe or antibody by reactivity with another reagent that is directly labeled. Examples of indirect labeling include detection of a primary antibody using a fluorescently labeled secondary antibody and end-labeling of a DNA probe with biotin such that it can be detected with fluorescently labeled streptavidin.

Proteins from cervical cells can be isolated using techniques that are well known to those of skill in the art. The protein isolation methods employed can, for example, be such as those described in Harlow and Lane (Harlow and Lane, 1988, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York).

A variety of formats can be employed to determine whether a sample contains a protein that binds to a given antibody. Examples of such formats include, but are not limited to, enzyme immunoassay (EIA), radioimmunoassay (RIA), Western blot analysis, immunohistochemistry and enzyme linked immunoabsorbant assay (ELISA). A skilled artisan can readily adapt known protein/antibody detection methods for use in determining whether cervical cells express a marker of the present invention.

In one format, antibodies, or antibody fragments, can be used in methods such as Western blots, immunohistochemistry or immunofluorescence techniques to detect the expressed proteins. In such uses, it is generally preferable to immobilize either the antibody, proteins, or cells containing proteins, on a solid support. Well-known supports or carriers include glass, polystyrene, polypropylene, polyethylene, dextran, nylon, amylases, natural and modified celluloses, polyacrylamides, gabbros, and magnetite.

One skilled in the art will know many other suitable carriers for binding antibody or antigen, and will be able to adapt such support for use with the present invention. For example, protein isolated from cervical cells can be run on a polyacrylamide gel electrophoresis and immobilized onto a solid phase support such as nitrocellulose. The support can then be washed with suitable buffers followed by treatment with the detectably labeled antibody. The solid phase support can then be washed with the buffer a second time to remove unbound antibody. The amount of bound label on the solid support can then be detected by conventional means.

The invention also encompasses kits for detecting the presence of a polypeptide or nucleic acid corresponding to a marker of the invention in a biological sample (*e.g.* a cervical smear). Such kits can be used to determine if a subject is

suffering from or is at increased risk of developing cervical cancer. For example, the kit can comprise a labeled compound or agent capable of detecting a polypeptide or an mRNA encoding a polypeptide corresponding to a marker of the invention in a biological sample and means for determining the amount of the polypeptide or mRNA in the sample (*e.g.*, an antibody which binds the polypeptide or an oligonucleotide probe which binds to DNA or mRNA encoding the polypeptide). Kits can also include instructions for interpreting the results obtained using the kit.

For antibody-based kits, the kit can comprise, for example: (1) a first antibody (*e.g.*, attached to a solid support) which binds to a polypeptide corresponding to a marker of the invention; and, optionally, (2) a second, different antibody which binds to either the polypeptide or the first antibody and is conjugated to a detectable label.

For oligonucleotide-based kits, the kit can comprise, for example: (1) an oligonucleotide, *e.g.*, a detectably labeled oligonucleotide, which hybridizes to a nucleic acid sequence encoding a polypeptide corresponding to a marker of the invention or (2) a pair of primers useful for amplifying a nucleic acid molecule corresponding to a marker of the invention. The kit can also comprise, *e.g.*, a buffering agent, a preservative, or a protein stabilizing agent. The kit can further comprise components necessary for detecting the detectable label (*e.g.*, an enzyme or a substrate). The kit can also contain a control sample or a series of control samples which can be assayed and compared to the test sample. Each component of the kit can be enclosed within an individual container and all of the various containers can be within a single package, along with instructions for interpreting the results of the assays performed using the kit.

B. Pharmacogenomics

Agents or modulators which have a stimulatory or inhibitory effect on expression of a marker of the invention can be administered to individuals to treat (prophylactically or therapeutically) cervical cancer in the patient. In conjunction with such treatment, the pharmacogenomics (*i.e.*, the study of the relationship between an individual's genotype and that individual's response to a foreign compound or drug) of the individual may be considered. Differences in metabolism of therapeutics can lead to severe toxicity or therapeutic failure by altering the relation between dose and blood concentration of the pharmacologically active drug. Thus, the pharmacogenomics of the individual permits the selection of effective agents (*e.g.*, drugs) for prophylactic or therapeutic treatments based on a consideration of the individual's genotype. Such pharmacogenomics can further be used to determine appropriate dosages and therapeutic regimens. Accordingly, the level of expression of a marker of the invention in an

individual can be determined to thereby select appropriate agent(s) for therapeutic or prophylactic treatment of the individual.

Pharmacogenomics deals with clinically significant variations in the response to drugs due to altered drug disposition and abnormal action in affected persons. See, *e.g.*, Linder (1997) *Clin. Chem.* 43(2):254-266. In general, two types of pharmacogenetic conditions can be differentiated. Genetic conditions transmitted as a single factor altering the way drugs act on the body are referred to as "altered drug action." Genetic conditions transmitted as single factors altering the way the body acts on drugs are referred to as "altered drug metabolism". These pharmacogenetic conditions can occur either as rare defects or as polymorphisms. For example, glucose-6-phosphate dehydrogenase (G6PD) deficiency is a common inherited enzymopathy in which the main clinical complication is hemolysis after ingestion of oxidant drugs (anti-malarials, sulfonamides, analgesics, nitrofurans) and consumption of fava beans.

As an illustrative embodiment, the activity of drug metabolizing enzymes is a major determinant of both the intensity and duration of drug action. The discovery of genetic polymorphisms of drug metabolizing enzymes (*e.g.*, N-acetyltransferase 2 (NAT 2) and cytochrome P450 enzymes CYP2D6 and CYP2C19) has provided an explanation as to why some patients do not obtain the expected drug effects or show exaggerated drug response and serious toxicity after taking the standard and safe dose of a drug. These polymorphisms are expressed in two phenotypes in the population, the extensive metabolizer (EM) and poor metabolizer (PM). The prevalence of PM is different among different populations. For example, the gene coding for CYP2D6 is highly polymorphic and several mutations have been identified in PM, which all lead to the absence of functional CYP2D6. Poor metabolizers of CYP2D6 and CYP2C19 quite frequently experience exaggerated drug response and side effects when they receive standard doses. If a metabolite is the active therapeutic moiety, a PM will show no therapeutic response, as demonstrated for the analgesic effect of codeine mediated by its CYP2D6-formed metabolite morphine. The other extreme are the so called ultra-rapid metabolizers who do not respond to standard doses. Recently, the molecular basis of ultra-rapid metabolism has been identified to be due to CYP2D6 gene amplification.

Thus, the level of expression of a marker of the invention in an individual can be determined to thereby select appropriate agent(s) for therapeutic or prophylactic treatment of the individual. In addition, pharmacogenetic studies can be used to apply genotyping of polymorphic alleles encoding drug-metabolizing enzymes to the identification of an individual's drug responsiveness phenotype. This knowledge, when applied to dosing or drug selection, can avoid adverse reactions or therapeutic failure

and thus enhance therapeutic or prophylactic efficiency when treating a subject with a modulator of expression of a marker of the invention.

This invention also provides a process for preparing a database comprising at least one of the markers set forth in Tables 1-13. For example, the polynucleotide sequences are stored in a digital storage medium such that a data processing system for standardized representation of the genes that identify a cervical cancer cell is compiled. The data processing system is useful to analyze gene expression between two cells by first selecting a cell suspected of being of a neoplastic phenotype or genotype and then isolating polynucleotides from the cell. The isolated polynucleotides are sequenced. The sequences from the sample are compared with the sequence(s) present in the database using homology search techniques. Greater than 90%, more preferably greater than 95% and more preferably, greater than or equal to 97% sequence identity between the test sequence and the polynucleotides of the present invention is a positive indication that the polynucleotide has been isolated from a cervical cancer cell as defined above.

In an alternative embodiment, the polynucleotides of this invention are sequenced and the information regarding sequence and in some embodiments, relative expression, is stored in any functionally relevant program, *e.g.*, in Compare Report using the SAGE software (available though Dr. Ken Kinzler at John Hopkins University). The Compare Report provides a tabulation of the polynucleotide sequences and their abundance for the samples normalized to a defined number of polynucleotides per library (say 25,000). This is then imported into MS-ACCESS either directly or via copying the data into an Excel spreadsheet first and then from there into MS-ACCESS for additional manipulations. Other programs such as SYBASE or Oracle that permit the comparison of polynucleotide numbers could be used as alternatives to MS-ACCESS. Enhancements to the software can be designed to incorporate these additional functions. These functions consist in standard Boolean, algebraic, and text search operations, applied in various combinations to reduce a large input set of polynucleotides to a manageable subset of a polynucleotide of specifically defined interest.

One skilled in the art may create groups containing one or more project(s) by combining the counts of specific polynucleotides within a group (*e.g.*, GroupNormal = Normal1 + Normal2, GroupTumor1 + TumorCellLine). Additional characteristic values are also calculated for each tag in the group (*e.g.*, average count, minimum count, maximum count). One skilled in the art may calculate individual tag count ratios between groups, for example the ratio of the average GroupNormal count to

the average GroupTumor count for each polynucleotide. A statistical measure of the significance of observed differences in tag counts between groups may be calculated.

C. Monitoring Clinical Trials

Monitoring the influence of agents (*e.g.*, drug compounds) on the level of expression of a marker of the invention can be applied not only in basic drug screening, but also in clinical trials. For example, the effectiveness of an agent to affect marker expression can be monitored in clinical trials of subjects receiving treatment for cervical cancer. In a preferred embodiment, the present invention provides a method for monitoring the effectiveness of treatment of a subject with an agent (*e.g.*, an agonist, antagonist, peptidomimetic, protein, peptide, nucleic acid, small molecule, or other drug candidate) comprising the steps of (i) obtaining a pre-administration sample from a subject prior to administration of the agent; (ii) detecting the level of expression of one or more selected markers of the invention in the pre-administration sample; (iii) obtaining one or more post-administration samples from the subject; (iv) detecting the level of expression of the marker(s) in the post-administration samples; (v) comparing the level of expression of the marker(s) in the pre-administration sample with the level of expression of the marker(s) in the post-administration sample or samples; and (vi) altering the administration of the agent to the subject accordingly. For example, increased administration of the agent can be desirable to increase expression of the marker(s) to higher levels than detected, *i.e.*, to increase the effectiveness of the agent. Alternatively, decreased administration of the agent can be desirable to decrease expression of the marker(s) to lower levels than detected, *i.e.*, to decrease the effectiveness of the agent.

D. Surrogate Markers

The markers of the invention may serve as surrogate markers for one or more disorders or disease states or for conditions leading up to disease states, and in particular, cervical cancer. As used herein, a "surrogate marker" is an objective biochemical marker which correlates with the absence or presence of a disease or disorder, or with the progression of a disease or disorder (*e.g.*, with the presence or absence of a tumor). The presence or quantity of such markers is independent of the disease. Therefore, these markers may serve to indicate whether a particular course of treatment is effective in lessening a disease state or disorder. Surrogate markers are of particular use when the presence or extent of a disease state or disorder is difficult to assess through standard methodologies (*e.g.*, early stage tumors), or when an assessment of disease progression is desired before a potentially dangerous clinical endpoint is

reached (*e.g.*, an assessment of cardiovascular disease may be made using cholesterol levels as a surrogate marker, and an analysis of HIV infection may be made using HIV RNA levels as a surrogate marker, well in advance of the undesirable clinical outcomes of myocardial infarction or fully-developed AIDS). Examples of the use of surrogate markers in the art include: Koomen *et al.* (2000) *J. Mass. Spectrom.* 35: 258-264; and James (1994) *AIDS Treatment News Archive* 209.

The markers of the invention are also useful as pharmacodynamic markers. As used herein, a "pharmacodynamic marker" is an objective biochemical marker which correlates specifically with drug effects. The presence or quantity of a pharmacodynamic marker is not related to the disease state or disorder for which the drug is being administered; therefore, the presence or quantity of the marker is indicative of the presence or activity of the drug in a subject. For example, a pharmacodynamic marker may be indicative of the concentration of the drug in a biological tissue, in that the marker is either expressed or transcribed or not expressed or transcribed in that tissue in relationship to the level of the drug. In this fashion, the distribution or uptake of the drug may be monitored by the pharmacodynamic marker. Similarly, the presence or quantity of the pharmacodynamic marker may be related to the presence or quantity of the metabolic product of a drug, such that the presence or quantity of the marker is indicative of the relative breakdown rate of the drug *in vivo*. Pharmacodynamic markers are of particular use in increasing the sensitivity of detection of drug effects, particularly when the drug is administered in low doses. Since even a small amount of a drug may be sufficient to activate multiple rounds of marker transcription or expression, the amplified marker may be in a quantity which is more readily detectable than the drug itself. Also, the marker may be more easily detected due to the nature of the marker itself; for example, using the methods described herein, antibodies may be employed in an immune-based detection system for a protein marker, or marker-specific radiolabeled probes may be used to detect a mRNA marker. Furthermore, the use of a pharmacodynamic marker may offer mechanism-based prediction of risk due to drug treatment beyond the range of possible direct observations. Examples of the use of pharmacodynamic markers in the art include: Matsuda *et al.* US 6,033,862; Hattis *et al.* (1991) *Env. Health Perspect.* 90: 229-238; Schentag (1999) *Am. J. Health-Syst. Pharm.* 56 Suppl. 3: S21-S24; and Nicolau (1999) *Am, J. Health-Syst. Pharm.* 56 Suppl. 3: S16-S20.

The markers of the invention are also useful as pharmacogenomic markers. As used herein, a "pharmacogenomic marker" is an objective biochemical marker which correlates with a specific clinical drug response or susceptibility in a subject (see, e.g., McLeod *et al.* (1999) *Eur. J. Cancer* 35(12): 1650-1652). The

presence or quantity of the pharmacogenomic marker is related to the predicted response of the subject to a specific drug or class of drugs prior to administration of the drug. By assessing the presence or quantity of one or more pharmacogenomic markers in a subject, a drug therapy which is most appropriate for the subject, or which is predicted to have a greater degree of success, may be selected. For example, based on the presence or quantity of RNA or protein for specific tumor markers in a subject, a drug or course of treatment may be selected that is optimized for the treatment of the specific tumor likely to be present in the subject. Similarly, the presence or absence of a specific sequence mutation in marker DNA may correlate with drug response. The use of pharmacogenomic markers therefore permits the application of the most appropriate treatment for each subject without having to administer the therapy.

VII. Experimental Protocol

A. Subtracted Libraries and Transcript Profiling

Subtracted libraries are generated using a PCR based method that allows the isolation of clones expressed at higher levels in one population of mRNA (tester) compared to another population (driver). Both tester and driver mRNA populations are converted into cDNA by reverse transcription, and then PCR amplified using the SMART PCR kit from Clontech. Tester and driver cDNAs are then hybridized using the PCR-Select cDNA subtraction kit from Clontech. This technique results in both subtraction and normalization, which is an equalization of copy number of low-abundance and high-abundance sequences. After generation of the subtractive libraries, a group of 96 or more clones from each library is tested to confirm differential expression by reverse Southern hybridization.

For the sequences identified through the above-described subtractive library hybridization technique, the "tester" source for the subtracted libraries was comprised of cDNA generated from four independent stage IB cervical tumors. The "driver" source for the subtracted libraries was comprised of cDNA generated from at least three independent samples of normal ectocervix that were manually dissected to isolate the epithelial component of the tissue. In some cases, the driver for the subtracted libraries also included cDNA generated from B-lymphocytes, T-lymphocytes, and other white blood cells, in activated and resting states. Is this true for new sequences?

For transcript profiling, nylon arrays are prepared by spotting purified PCR product onto a nylon membrane using a robotic gridding system linked to a sample database. Several thousand clones are spotted on each nylon filter.

RNA or DNA from clinical samples (tumor and normal), and cell lines as well as from subtracted libraries, are used for hybridization against the nylon arrays. The RNA or DNA is labeled utilizing an *in vitro* reverse transcription reaction that contains a radiolabeled nucleotide that is incorporated during the reaction. Alternatively, mRNA is converted into cDNA by reverse transcription, and then PCR amplified using the SMART PCR kit from Clontech. Hybridization experiments are carried out by combining labeled RNA or DNA samples with nylon filters in a hybridization chamber. Duplicate, independent hybridization experiments are performed to generate transcriptional profiling data. See, *Nature Genetics*, 21 (1999). Amplified cDNA is then radiolabelled using random priming with PRIME IT from Stratagene.

B. Proteomics

Proteins that are secreted by normal and transformed cells in culture are analyzed to identify those proteins that are likely to be secreted by cancerous cells into body fluids. Supernatants are isolated and MWT-CO filters are used to simplify the mixture of proteins. The proteins are then digested with trypsin. The tryptic peptides are loaded onto a microcapillary HPLC column where they are separated, and eluted directly into an ion trap mass spectrometer, through a custom-made electrospray ionization source. Throughout the gradient, sequence data is acquired through fragmentation of the four most intense ions (peptides) that elute off the column, while dynamically excluding those that have already been fragmented. In this way, approximately 2000 scans worth of sequence data are obtained, corresponding to approximately 50 to 200 different proteins in the sample. These data are searched against databases using correlation analysis tools, such as MS-Tag, to identify the proteins in the supernatants.

C. Human papillomavirus (HPV) Model System

To test the effects of human papillomavirus on gene expression in cervical cells, the E6 and E7 oncogenes of HPV were expressed in primary ectocervical cells through retroviral gene transfer. These experiments utilized two types of HPV, a low-risk type (HPV-6b) which is primarily associated with condyloma and low grade squamous intraepithelial lesions (LGSIL), and a high-risk type (HPV-16) which is

primarily associated with high grade squamous intraepithelial lesions (HGSIL) and cervical cancer.

Retroviral constructs were made by cloning DNA fragments encoding the E6 and E7 oncogenes from the low-risk HPV-6b virus and the high risk HPV-16 virus into the LXSN retroviral vector (Miller and Rosman, 1989, *Biotechniques* 7: 980-990). The LXSN retroviral vector without an insert served as a control. Three types of retroviruses (LXSNcontrol, LXSN-HPV-16E6E7, and LXSN-HPV-6bE6E7) were produced and used to infect primary ectocervical cells using standard methods (Pei et al., 1998, *Carcinogenesis* 19: 1481-1486). After infection, cervical cells were placed into selective media containing the antibiotic G418 and were maintained in culture until senescence.

LXSN control infected cells underwent senescence 4 passages after infection. HPV-6bE6E7 cells underwent senescence 6 passages after infection, indicating that HPV-6bE6E7 expression confers an extended lifespan on the ectocervical cells. HPV-16E6E7 cells continued to proliferate for more than 20 passages post-infection, indicating that HPV-16E6E7 is able to immortalize ectocervical cells. Ectocervical cells were considered immortalized at passage 20 post-infection.

Frozen cell pellets were collected at each passage and RNA was prepared from the cells using the RNeasy kit from Qiagen. RNA was labeled using an *in vitro* reverse transcription reaction that contains a radiolabeled nucleotide. Radiolabeled probes were hybridized to nylon microarrays as described above.

VIII . Summary Of The Data Provided In The Tables

The level of expression of numerous potential markers (*i.e.* "the markers of the invention") in cells obtained from four different stage IB cervical cancers, two different CIN III tissues and in cells of six different cervical cancer cell lines (*i.e.* a total of ten sample sources) were compared with levels of expression of the same markers in non-cancerous cervical cell samples. Markers for which significant differences in the levels of expression in cancer-related samples and non-cancerous samples were observed are listed in the Tables.

The levels of expression of numerous potential markers in HPV-16E6E7 infected, HPV-6bE6E7 infected, and control LXSN infected ectocervical cells at various timepoints were compared by transcriptional profiling. The acute timepoint refers to passage 1 post-infection; the extended lifespan timepoint refers to passage 6 post-infection, and the immortal timepoint refers to passage 20 post-infection.

Three classes of markers useful for diagnosing cervical cancer and its precursors are presented in Tables 10-12. First, markers which are overexpressed in

HPV-16E6E7 cells or HPV-6bE6E7 cells compared to control LXSN cells are markers of HPV infection. Second, markers which are overexpressed in high-risk HPV-16E6E7 infected cells compared to low-risk HPV-6bE6E7 infected are markers of high-risk HPV infection. Third, markers which are overexpressed in immortalized HPV-16E6E7 cells compared to non-immortalized (acute or extended lifespan) HPV-16E6E7 cells are markers of progression of cervical cancer or its precursors. Markers of these two types are listed in Tables 10-12.

Table 1 shows expression profiles for sequences in tissue samples from four different stage IB cervical tumors and two different pre-cancerous cervical tissues (cervical intraepithelial neoplasia; CIN III). These are compared to mean expression in four non-cancerous cervical tissues. The 2068 sequences included in Table 1 are:

(1) expressed at least five-fold higher in at least one of the four stage IB tumor tissues than in non-cancerous control tissue, and/or

(2) expressed at least three-fold higher in at least two of the four stage IB tumor tissues than in non-cancerous control tissue, and/or

(3) expressed at least three-fold higher in at least one of the two pre-cancerous tissues (CIN III) than in non-cancerous control tissue,

(some data from Table 2 is included for comparison.)

Table 2 shows 336 sequences whose expression was increased at least three-fold in RNA pooled from six different cervical ectoepithelial cancer cell lines over that of RNA pooled from three non-cancerous ectoepithelial cervical cell lines.

Table 3 shows 1231 sequences which exhibited at least three-fold elevated expression, but not more than five-fold elevated expression, in one of the four stage IB tumor tissue samples as compared to non-cancerous control tissue.

Table 4 shows 392 sequences from Table 1 which were also identified through subtracted library experiments.

Table 5 shows 36 sequences from Table 2 which were also identified through subtracted library experiments.

Table 6 shows 161 sequences from Table 3 which were also identified through subtracted library experiments.

Table 7 shows 245 sequences from Table 1. These sequences are expressed at least three-fold higher in at least two of the four stage IB tumor tissues and in one of the two CIN III tissues as compared to expression in non-cancerous control tissue.

Table 8A shows 3584 sequences that were identified through subtracted library experiments. The accession numbers referred to in Table 8A are from publicly available databases. In particular, sequences 1-1887 and 3070-3309 are from dbEST, a division of GenBank; sequences 1888-3008 and 3310-3366 are from GenBank; and, sequences 3009-3067 and 3367-3461 are from NUCPATENT, a GENESEQ database, available through Derwent. Table 8B shows sequences from Table 8A that do not have GenBank accession numbers.

Table 8A-1 shows the accession number ("ACC Num") of the markers of the present invention and the corresponding GenBank GI number ("GI Nbr"). One skilled in the art may thus obtain from the Tables of the invention, both the GenBank accession number as well as the GenBank GI number for a marker of the present invention, thereby identifying the nucleotide and/or polypeptide sequence of that marker.

Table 9 shows preferred sequences which are expressed at least three-fold higher in at least one of two CIN III tissues as compared to expression in non-cancerous control tissue.

Table 10 shows 37 genes whose expression were increased at least three-fold in one or more of the following comparisons at the acute timepoint:

1) HPV-16E6E7 cells at passage 1 post-infection compared to LXSN control cells at passage 1 post-infection

2) HPV-6bE6E7 cells at passage 1 post-infection compared to control LXSN cells at passage 1 post-infection

3) HPV-16E6E7 cells at passage 1 post-infection compared to HPV-6bE6E7 cells at passage 1 post-infection3

Table 11 shows 58 genes whose expression was increased at least three-fold in HPV-16E6E7 cells at passage 6 post-infection (extended lifespan) compared to HPV-6bE6E7 cells at passage 6 post-infection (extended lifespan).

Table 12 shows 78 genes whose expression was increased at least three-fold in one or both of the following comparisons:

1) HPV-16E6E7 cells at passage 20 post-infection (immortal timepoint) compared to HPV-16E6E7 cells at passage 1 post-infection (acute timepoint)

2) HPV-16E6E7 cells at passage 20 post-infection (immortal timepoint) compared to HPV-16E6E7 cells at passage 6 post-infection (extended lifespan timepoint).

Tables 10-12 also indicate which markers identified in the HPV model system were also identified as upregulated in the transcriptional profiles of stage IB tumors and CIN III samples. The last 2 columns of Table 10-12 report the number of

stage IB tumor samples (out of 4) and CINIII samples (out of 4) in which the genes were upregulated at least three-fold compared to the average of 4 normal ectocervical samples. Markers which are upregulated in at least one tumor or CIN sample are preferred.

Table 13 shows the calculated outcome of expression profiles for the listed markers ("Clone Id", "Accession #", Nuc Seq Id #) in 9 cervical tumors, 5 CIN III tissues and 3 adenocarcinoma samples compared with 9 normal ecto-cervical, 3 endo-cervical and 5 CIN I tissue samples. The fold changes - tumor/normal were calculated by a proprietary algorithm that calculates gene up-regulation (fold changes) between tester samples and control samples. The calculated results, tumors vs. normal and CIN I, adenocarcinoma vs. normals and CIN I, are listed as T_NC1_POOF and AdePOOF_SNC1aN, respectively.

For each of the Tables, the following data are presented.

"Cluster ID" corresponds to the cluster that the particular sequence has been assigned according to the UniGene database at NCBI (see, for example http://www.ncbi.nlm.nih.gov/UniGene/index.html).

"GenBank Accession Number" or "Accession No." or "acc" or "Accession #" or "Acc Num" is the identification number assigned to the marker in the relevant database (see, *e.g.* "http://www.ncbi.nlm.nih.gov/genbank/ query_form.html" and "www.derwent.com" for further information). "GI Nbr" or "Nuc Seq Id #" is the GI identification number assigned to the marker in the GenBank database (see *supra*). All referenced database sequences are expressly incorporated herein by reference.

"Clone" and "Clone Id" corresponds to the cDNA clone number from the IMAGE Consortium (see, for example Lennon, G., *et al.*, 1996, *Genomics* 33:151-152; and http://www-bio.llnl.gov/bbrp/image/image.html). All referenced IMAGE clone sequences are expressly incorporated herein by reference.

"Avg. Norm." indicates the mean expression in four non-cancerous tissues which have been designated Mayo000039, Mayo000041, Mayo000042, and CHT000302.

"Avg. Tumor" indicates the mean expression in four stage IB cervical tumors which have been designated Mayo000009, Mayo000011, Mayo000016, and Mayo000019.

"Avg. Fold" indicates fold increase in expression in the tumor tissue over that of the normal tissue (calculated as Avg. Tumor/Avg. Norm.).

"Fold Mayo9" indicates the fold increase in expression in cervical tumor Mayo000009 over that observed in normal tissue (calculated as expression score in Mayo000009/Avg. Norm.).

"Fold Mayo11" indicates the fold increase in expression in cervical tumor Mayo000011 over that observed in normal tissue (calculated as expression score in Mayo000011/Avg. Norm.).

"Fold Mayo16" indicates the fold increase in expression in cervical tumor Mayo000016 over that observed in normal tissue (calculated as expression score in Mayo000016/Avg. Norm.).

"Fold Mayo19" indicates the fold increase in expression in cervical tumor Mayo000019 over that observed in normal tissue (calculated as expression score in Mayo000019/Avg. Norm.).

"Max. Fold" indicated the highest fold increase in expression among the four tumors.

"Cancer Cell" indicates expression of the sequence in RNA pooled from the six cervical cancer cell lines ME-180, C4II, SiHa, Caski, C-33a, and HT-3.

"Normal Cell Pool" indicates expression of the sequence in RNA pooled from three non-cancerous cervical (ectoepithelial) cell lines from Clonetics (San Diego, CA).

"Cancer Cell Pool/Normal Cell Pool" corresponds to the ratio of sequence expression in RNA pooled from six cervical cancer lines, compared to RNA pooled from three non-cancerous cervical (ectoepithelial) cell lines.

"Fold Mayo5" indicates the fold increase in expression in a pre-cancerous tissue (CIN III; cervical intraepithelial neoplasia) which has been arbitrarily designated Mayo000005 over that observed in normal tissue.

"Fold Mayo318" indicates the fold increase in expression in pre-cancerous tissue (CIN III) which has been arbitrarily designated Mayo000318 over that observed in normal tissue.

"mpm000138" cDNA pooled from four normal smaples (Mayo000039, Mayo000041, Mayo000042, CHT000302).

"mpm000139" indicates expression of the sequence in a CINIII sample.

"mpm000140" indicates expression of the sequence in a CINIII sample.

"fold mpm000139/mpm000138" indicates the fold increase in expression in mpm000139 over that observed in mpm000138.

"Fold mpm00140/mpm000138" indicates the fold increase in expression in mpm000140 over that observed in mpm000138.

"control p1" indicates the expression level of the gene in RNA from LXSN control infected cells at passage 1 post-infection

"HPV-16 p1" indicates the expression level of the gene in RNA from HPV-16E6E7 infected cells at passage 1 post-infection

"HPV-6 p1" indicates the expression level of the gene in RNA from HPV-6bE6E7 infected cells at passage 1 post-infection

"HPV-16 p1/control p1" indicates the fold increase in expression in HPV-16E6E7 infected cells at passage 1 when compared with LXSN control infected cells at passage 1.

"HPV-6 p1/control p1" indicates the fold increase in expression in HPV-6bE6E7 infected cells at passage 1 when compared with LXSN control infected cells at passage 1.

"HPV-16 p1/HPV-6 p1" indicates the fold increase in expression in HPV-16E6E7 infected cells at passage 1 when compared with HPV-6bE6E7 control infected cells at passage 1.

"# of tumors" indicates the number of stage IB tumors (out of a maximum of 4) in which the clone is upregulated at least three-fold compared to the mean expression of four normal ectocervical tissues. Tumors have been designated Mayo000009, Mayo000011, Mayo000016, and Mayo000019, and non-cancerous normal tissues have been designated Mayo000039, Mayo000041, Mayo000042, and CHT000302.

"# of CINIII" indicates the number of CINIII precancerous lesions (out of a maximum of 4) in which the clone is upregulated at least three-fold compared to the mean expression of four normal ectocervical tissues. CINIII samples have been designated Mayo000005, Mayo000318, Mayo000348, and Mayo000349, and non-cancerous normal tissues have been designated Mayo000039, Mayo000041, Mayo000042, and CHT000302.

"HPV-6 p6" indicates the expression level of the gene in RNA from HPV-6bE6E7 infected cells at passage 6 post-infection.

"HPV-16 p6" indicates the expression level of the gene in RNA from HPV-16E6E7 infected cells at passage 6 post-infection.

"HPV-16 p6/HPV-6b p6" indicates the fold increase in expression in HPV-16E6E7 infected cells at passage 6 when compared with HPV-6bE6E7 control infected cells at passage 6.

"HPV-16 p20" indicates the expression level of the gene in RNA from HPV-16E6E7 infected cells at passage 20 post-infection.

"HPV-16 p20/HPV-16 p1" indicates the fold increase in expression in HPV-16E6E7 infected cells at passage 20 when compared with HPV-16E6E7 infected cells at passage 1.

"HPV-16 p20/HPV-16 p6" indicates the fold increase in expression in HPV-16E6E7 infected cells at passage 20 when compared with HPV-16E6E7 infected cells at passage 6.

The contents of all references, patents, published patent applications, and database records including GenBank, IMAGE consortium and Derwent cited throughout this application, are hereby incorporated by reference.

Other Embodiments

Those skilled in the art will recognize, or be able to ascertain using no more than routine experimentation, many equivalents to the specific embodiments of the invention described herein. Such equivalents are intended to be encompassed by the following claims.

What is claimed is:

Table 1

Cluster ID	Accession No.	Clone	Avg. Norm.	Avg. Tumor	Avg. Fold	Fold Mayo9	Fold Mayo11	Fold Mayo16	Fold Mayo19	Max Fold	Fold Mayo5	Fold Mayo318
Hs.173894	N92646	289337	2.48	50.41	20.3	12.6	11.7	53.5	3.4	53.5	6.8	3.9
Hs.213632	AA457728	810754	3.02	63.05	20.8	10.3	25.6	35.1	12.4	35.1	4.8	9.1
Hs.7962	AA707086	451587	1.97	27.36	13.9	8.8	4.4	28.6	13.7	28.6	6.3	7.3
Hs.214182	AA598974	898286	3.35	23.07	6.9	4.7	4.5	12.2	6.2	12.2	3.5	3.4
Hs.42650	AA706968	451907	2.16	14.61	6.8	3.3	3.2	9.3	11.3	11.3	5.6	7.3
Hs.93668	N23605	250869	18.33	134.69	7.3	10.3	5.4	7.1	6.5	10.3	4.4	10.2
Hs.80658	H61243	236034	1.3	10.25	7.9	9.7	5.3	8.4	8.1	9.7	4.8	8.2
Hs.5101	AA449336	785707	5.23	34.12	6.5	6	4.1	6.6	9.4	9.4	5.8	5.4
Hs.93668	AA029490	366815	9.01	63.94	7.1	7.1	5.8	8.2	7.3	8.2	4.4	10.2
Hs.80684	AA019203	363103	2.15	11.09	5.1	4.9	4.5	7.9	3.3	7.9	3.6	4.9
Hs.217554	AA447679	813604	1.9	8.14	4.3	4.5	3.1	4.9	4.6	4.9	3.7	5.6
Hs.7590	N50079	282720	9.83	37.46	3.8	3.6	4	4.5	3.2	4.5	3.6	6.6
Hs.14623	AA630800	856447	10.16	126.36	12.4	31.6	7.9	6.2	4.1	31.6	1.3	3.3
Hs.54451	AA677534	460403	2.17	32.1	14.8	26.8	23.3	5.3	3.6	26.8	1.5	3.5
Hs.9914	AA701860	434768	0.24	2.41	10	4.4	26.3	3.7	5.4	26.3	2.4	10.6
Hs.81915	AA873060	1476065	22.81	170.32	7.5	5	3.5	16.7	4.7	16.7	5.8	2.6
Hs.82985	AA461456	796613	0.86	10.17	11.9	16.7	7.7	7.5	15.6	16.7	0.8	3.6
Hs.155530	AA491191	824602	5.9	45.19	7.7	3.8	5.3	13.8	7.9	13.8	2.3	4.5
Hs.179657	AA455222	810017	0.82	5.62	6.9	13.4	4.3	4.7	5.1	13.4	1.8	4.8
Hs.101850	AA700832	436094	3.29	28.48	8.7	12.9	4.1	10.1	7.6	12.9	1.2	4.3
Hs.146360	AA419251	755599	16.57	108.27	6.5	6.3	12.8	3.1	3.9	12.8	1.4	3.6
Hs.6823	AA456821	815556	0.98	8.13	8.3	12.6	3.3	10.6	6.6	12.6	1.7	3.8
Hs.216752	AA863149	1455641	11.98	101.14	8.4	10	7	4.9	11.8	11.8	1.5	3.1
Hs.97803	AA400393	742630	0.71	4.91	6.9	5	3.7	11.8	7	11.8	2.9	3.8
Hs.202541	R51493	38569	0.53	4.34	8.2	6.3	6	11.4	8.9	11.4	1.6	9.3
Hs.118110	AA485528	811024	0.53	3.47	6.6	6.1	3.4	10.9	6	10.9	1.4	5.4
Hs.112607	AA608870	1048601	1.55	7.34	4.7	3.4	3.1	9	3.5	9	1.3	3.2
Hs.1390	T98719	122241	43.87	220.08	5	5	3.3	4.8	7	7	2.1	3
Hs.203779	AA026682	366971	3.21	15.64	4.9	3.4	4	6.3	5.8	6.3	3.4	2.2
Hs.8551	AA703250	436155	2.78	13.27	4.8	5.8	3.1	4.9	5.3	5.8	1.9	4
Hs.59988	AA447810	813586	3.34	13.73	4.1	4.6	3.1	4.1	4.6	4.6	3	5.3

Table 1

Hs.9880	AA418507	767277	6.02	21.78	3.6	3.2	3	3.8	4.5	4.5	2.2	3.5
Hs.118162	R62612	139009	1.12	83.59	74.5	189.5	43.8	33.3	31.3	189.5	1.2	1.5
Hs.1119	W23937	309893	0.53	39.49	74.9	159.8	60	40.1	39.5	159.8	1.9	1.9
Hs.1695	R92994	196612	0.69	35.41	51.4	133.4	14.4	25.5	32.4	133.4	1.2	2.6
Hs.118162	R62612	139009	1.37	68.69	50	119.9	32.6	23.8	23.7	119.9	1.4	1.5
Hs.2248	AA878880	1493160	0.45	26.02	57.6	91.9	77.3	42.8	18.4	91.9	1.1	1.1
Hs.83326	W51794	324492	0.4	15.92	39.3	86.4	21.2	37.9	11.8	86.4	1.3	1.5
Hs.2258	AA857496	1384851	1.17	33.06	28.2	76.8	7.1	24.9	4.2	76.8	0.5	0.3
Hs.313	AA775616	378461	3.01	93.07	31	65	5	45.4	8.4	65	1.9	0.8
Hs.111779	H95960	250654	8.74	204.97	23.4	65	3.5	16.9	8.4	65	1.2	2.3
Hs.197458	N27159	269815	0.1	2	20	46.2	7.9	10.6	15.4	46.2	0.6	0.6
Hs.195851	AA634006	868304	51.8	770.66	14.9	39.7	3.8	10.9	5.1	39.7	1.5	1.8
Hs.220344	AA410206	754436	7.03	105.12	15	39.7	3.4	7.1	9.6	39.7	1.2	1.2
Hs.167470	H11453	47459	0.63	11.13	17.5	9	14.6	7.2	39.4	39.4	0.2	0.9
Hs.32698	H37832	191569	0.3	3.93	13.3	33.6	7.4	4.7	7.3	33.6	0.9	1.2
Hs.203411	N73836	296556	0.59	7.41	12.5	32.2	4.9	6.7	6.4	32.2	0.6	0.5
Hs.79914	AA453712	813823	4.25	55.87	13.1	30.2	3.4	14	5	30.2	1	0.7
Hs.220381	AA447503	784285	0.64	6.86	10.7	27.2	3.3	7.9	4.6	27.2	0.9	1.4
Hs.25738	R50761	38718	0.32	4.21	13.3	3.6	11.6	27	11	27	0.5	1.1
Hs.216927	T71841	85313	0.22	2.4	10.7	25.5	4.8	7.2	5.2	25.5	1.4	2.3
Hs.78672	R43734	32609	0.34	3.37	9.9	24.3	3.8	5.4	6.1	24.3	0.9	0.8
Hs.151242	AA481438	756556	3.56	44.83	12.6	23.9	4.3	14.1	7.9	23.9	1	1
Hs.114911	AA488238	877641	1.13	13.3	11.8	22.8	3.6	10.5	10.2	22.8	2.1	2.2
Hs.10511	AA455496	809719	1.69	15.95	9.4	22.7	3.8	7.3	3.9	22.7	1.1	0.7
Hs.126083	AA428240	773575	1.37	11.75	8.6	5.9	4.5	20.6	3.3	20.6	0.6	1.1
Hs.75742	AA155942	590264	1.35	17.87	13.2	10.5	3.8	19.6	18.9	19.6	2	1.7
Hs.7882	AA478747	753982	1.21	11.98	9.9	19.2	3.1	12.8	4.6	19.2	1.6	1.1
Hs.22385	H89788	240295	1.14	11.1	9.7	17.4	7.3	7.4	6.9	17.4	1	1.5
Hs.199634	R45116	34905	1.79	16.5	9.2	16.1	5.7	8.6	6.4	16.1	1	1.5
Hs.77326	AA598601	898218	2.39	16.46	6.9	3.2	4.7	3.9	15.7	15.7	1.9	2.8
Hs.119571	T98612	122159	7.45	57.69	7.7	15.4	3.1	4	8.4	15.4	1.1	1.9
Hs.144319	AA280279	712292	1.01	9.54	9.5	7.3	12.7	14.7	3.2	14.7	0.7	0.6
Hs.78672	W23598	309826	0.2	1.49	7.4	14.7	4.6	4.2	6.2	14.7	1.8	1.7
Hs.125087	AA151775	566383	2.96	22.01	7.4	4.8	7.2	3.7	14.1	14.1	0.3	0.4
Hs.62661	AA486849	841008	0.46	3.35	7.3	6	5.8	13.6	3.7	13.6	0.8	0.3

Table 1

Hs.22265	H11036	47378	1.7	11.06	6.5	13.5	3.9	5.3	3.3	13.5	1.1	1.3
Hs.173043	AA480012	754008	0.12	0.94	7.8	13.3	4.3	8.6	4.8	13.3	1.2	2.5
Hs.65029	AA292153	725365	0.21	1.92	9.1	9.2	7.3	6.8	13.2	13.2	1	2.4
Hs.763	H20872	51447	1.12	9.49	8.5	11.5	4.8	12.9	4.7	12.9	0.4	0.6
Hs.76807	R47979	153411	44.49	293.37	6.6	12.6	3.2	6.7	3.9	12.6	0.8	0.6
Hs.624	AA082747	549933	0.24	1.72	7.3	11.8	8.9	4	4.3	11.8	0.6	1.4
Hs.174195	AA862371	1455976	52.51	415.67	7.9	8.2	7.4	4.3	11.7	11.7	1.5	2.4
Hs.72217	AA490673	823850	1.27	10.63	8.4	10.7	5.2	9	8.7	10.7	1.9	1.4
Hs.214989	R72244	155806	1.96	16.92	8.6	9	8.8	6.1	10.7	10.7	0.6	1.8
Hs.86429	AA485080	815740	0.88	6.56	7.5	10.6	3.1	6.9	9.1	10.6	2.2	2.3
Hs.111301	AA936799	1474174	3.08	16.29	5.3	10.2	3.1	3.7	4.2	10.2	0.3	1.3
Hs.75470	AA410567	754479	0.75	5	6.7	4.4	9.1	3.1	10.2	10.2	1.2	1.5
Hs.215326	AA076645	526184	1.26	7.59	6	10.1	4.3	3.5	6.2	10.1	0.6	0.8
Hs.75199	AA129170	586725	0.77	5.73	7.4	7.8	6.5	10	5.3	10	0.4	1.7
Hs.214989	R34567	136508	1.39	9.42	6.8	5.7	6.8	4.9	9.7	9.7	1	2.9
Hs.58435	N64862	293325	2.71	16.75	6.2	9.5	6.6	4.7	3.9	9.5	0.7	0.7
Hs.179573	AA490172	839991	6.26	37.56	6	9.3	4	5	5.8	9.3	1	1.6
Hs.2867	AA209529	588915	110.52	834.8	7.6	9.2	6.3	6.7	8	9.2	0.4	2.6
Hs.13572	AA521411	826089	2.22	16.5	7.4	6.6	8.4	8.9	5.7	8.9	1.6	1
Hs.19414	H19229	50900	3.91	23.87	6.1	5.3	3.8	6.4	8.9	8.9	1.1	1.3
Hs.10706	AA487557	841415	10.42	65.26	6.3	8.8	3.9	6.1	6.3	8.8	1.1	1.9
Hs.14963	AA488340	842992	1.19	7.52	6.3	7.6	3.1	8.5	6.1	8.5	2.2	2.7
Hs.170328	R23083	131362	4.22	20.29	4.8	8.2	3.1	3.4	4.5	8.2	0.9	1.3
Hs.10784	R71627	142944	1.52	6.9	4.5	4.3	3.1	7.8	3.1	7.8	0.7	2.2
Hs.57664	AA486731	841207	5.67	27.22	4.8	4	4.3	3.2	7.7	7.7	0.4	1.2
Hs.167741	AA478585	753587	2.45	11.18	4.6	4.3	3.3	7.4	3.1	7.4	0.7	0.6
Hs.184532	AA007641	429434	0.48	2.83	5.9	5.9	5.5	4.8	7.3	7.3	0.5	2.3
Hs.168159	R37093	25718	6.18	31.47	5.1	7.1	3.1	6	4.2	7.1	1.7	1.5
Hs.79067	R83610	187614	0.43	2.41	5.6	6.9	3.7	6.1	5.6	6.9	1	2.3
Hs.198282	N25945	268736	2.72	16.03	5.9	6.6	5.5	5.9	5.6	6.6	1	2.4
Hs.102664	AA495734	768271	0.47	2.49	5.3	6.1	3.8	4.9	6.4	6.4	0.9	1.4
Hs.178743	AA405989	742977	1.41	6.49	4.6	5.9	3.8	3.9	4.7	5.9	2.7	2.5
Hs.100980	N49665	243882	2.09	10.02	4.8	5.9	4.2	5.7	3.4	5.9	1.3	1.4
Hs.44580	AA490959	824193	3	12.85	4.3	5.4	3.9	4.2	3.5	5.4	1.3	2.2
Hs.27608	AA131707	503865	0.87	3.56	4.1	4.3	3.7	5.1	3.3	5.1	1.1	2.2

Table 1

Hs.77695	AA262211	686172	1.83	6.35	3.5	3.9	3.3	3.7	3.1	3.9	2.5	2.9
Hs.194272	AA703392	450060	0.98	12.49	12.7	10.4	14.7	23.4	2.5	23.4	3.9	3.5
Hs.194694	AA418097	767405	6.2	60.68	9.8	1.6	21.2	7.7	8.7	21.2	4.5	3.7
Hs.35962	W90793	418279	5.16	62.39	12.1	1.5	19.3	21.2	6.5	21.2	4.1	7.4
Hs.116107	AA448464	782446	5.63	38.5	6.8	3.7	18.1	2.4	3.1	18.1	3	4.4
Hs.85201	H11808	47481	9.42	76.31	8.1	2.9	17.6	5	7	17.6	5.7	5.4
Hs.79375	AA455043	812246	0.79	4.58	5.8	3.3	2.1	14.3	3.5	14.3	3.1	3.8
Hs.179661	AA427899	773479	38.32	324.2	8.5	13.5	1.1	14.2	5	14.2	3.1	3.2
Hs.75725	H08564	45544	4.84	36.97	7.6	8.9	0.4	14	7.4	14	5.8	3.6
Hs.78056	W75938	345538	0.61	3.44	5.7	4.4	12.6	1.9	3.8	12.6	3.2	6.8
Hs.48855	N63744	292936	2.33	18.67	8	7.6	2.6	11.1	10.7	11.1	7.1	8.4
Hs.133158	AA857212	1435029	0.61	4.29	7.1	10.8	1.3	5.7	10.6	10.8	6.4	7.6
Hs.4854	W00390	291057	0.94	4.94	5.3	3	3	9.7	5.3	9.7	4.9	3.1
Hs.172665	H10778	47384	8.24	51.17	6.2	6.1	2.5	9.5	6.8	9.5	3.2	4.6
Hs.199147	R19158	129865	2.01	11.96	6	5.3	2.2	9.3	7	9.3	4.9	5.1
Hs.219427	N44101	272942	0.67	3.35	5	8.2	0.7	8	3.2	8.2	3.2	4.3
Hs.46677	N47113	280375	1.07	5.19	4.9	2.7	3.4	8.1	5.2	8.1	3	4.3
Hs.178743	W02333	292042	4.69	27.25	5.8	7.5	2	7.1	6.6	7.5	4.8	4.2
Hs.81892	W68219	342640	2.95	12.37	4.2	0.4	5.2	7.3	3.9	7.3	5.3	4.7
Hs.75841	AA682851	450307	2.11	9.25	4.4	7.3	1.7	4.3	4.3	7.3	3.2	3.9
Hs.90625	AA491271	824622	1.4	6.76	4.8	7.1	1.3	4.1	6.8	7.1	4.3	3.3
Hs.114034	AA496087	743041	1.96	7.68	3.9	4.7	0.6	3.8	6.5	6.5	3.2	4.1
Hs.69563	H59203	204214	0.54	2.07	3.8	3.3	1.8	6.2	4	6.2	3.8	5.7
Hs.129055	AA149882	504469	0.7	2.54	3.6	5.9	1.4	3.7	3.5	5.9	3.2	3.6
Hs.215651	H81199	241365	3.05	11.81	3.9	4.5	1.2	5.8	4	5.8	4.8	4.1
Hs.77695	W93568	357373	0.88	4.02	4.6	5.3	2.9	5.5	4.5	5.5	4.2	4.5
Hs.1063	AA411107	724387	3.73	12.61	3.4	3.2	1.7	3.1	5.4	5.4	3.5	3.8
Hs.24003	W92963	356992	17.95	54.19	3	4.1	1	3.5	3.5	4.1	3.2	9.5
Hs.8878	AA504719	825606	1.16	3.41	2.9	1.2	3.4	3.1	4	4	3.1	3.7
Hs.140	AA663981	855745	3.83	123.81	32.4	17.8	7.4	101.6	2.7	101.6	5.6	2.1
Hs.214794	T67053	66560	19.54	540.08	27.6	44.9	4.5	58.4	2.7	58.4	9.1	1.6
Hs.27519	H47397	193139	0.11	1.94	18.3	12.8	3.3	55.2	2	55.2	3.9	1.4
Hs.107139	AA150263	491644	4.11	47.04	11.5	2.5	31.6	6.3	5.4	31.6	0.5	3.8
Hs.84229	AA702973	447167	0.16	1.3	8.4	2.8	3.7	22.3	4.7	22.3	2.7	4.6
Hs.35120	W40404	309288	6.24	72.06	11.5	18.4	2.9	17.2	7.7	18.4	2.1	3.2

Table 1

Hs.214402	H54752	203275	2.55	25.49	10	17.2	2.9	12.8	7	17.2	2.8	4.6
Hs.77274	AA284668	714106	1.28	11.13	8.7	16.2	10.1	2.2	6.1	16.2	1.5	6.6
Hs.145698	N50262	280249	0.19	1.83	9.5	15.8	2.1	11	9	15.8	2.4	5
Hs.36232	AA725561	1343726	0.58	4.15	7.1	3.6	1.9	15.3	7.8	15.3	3.2	2.2
Hs.17409	AA873604	1323448	1.3	7.63	5.9	1.9	14.1	4	3.5	14.1	2	3.3
Hs.100132	H99035	261472	3.34	33.66	10.1	12.9	2.6	13.9	10.8	13.9	2.8	4.2
Hs.200483	AA463220	797042	1.67	9.72	5.8	2.3	3	4.4	13.6	13.6	4.5	1.5
Hs.58589	W79345	346997	0.92	5.72	6.2	4.9	12	6.1	1.9	12	1.8	5
Hs.60878	AA279426	704284	0.44	2.47	5.6	2.4	11.9	4.8	3.4	11.9	2	3
Hs.218464	H02230	151055	3.38	24.49	7.2	11	2.7	10.7	4.6	11	1.8	3.2
Hs.99418	AA455973	812056	0.7	4.01	5.7	1.6	7.3	3.1	10.8	10.8	4.4	1.9
Hs.38842	H69334	234237	4.02	19.87	4.9	3.2	1	5.1	10.5	10.5	4.2	2.1
Hs.215969	AA406395	753400	5.96	32.96	5.5	10.3	1.7	5.9	4.3	10.3	2.9	4.1
Hs.14894	T81514	109437	0.55	3.56	6.5	9.6	1.4	4.8	10.1	10.1	3.5	1.9
Hs.7327	AA194833	664975	8.13	52.73	6.5	2.4	7.4	6.7	9.5	9.5	1.7	4.2
Hs.129913	AA015891	361456	3.76	22.71	6	8.5	3.6	9.2	2.8	9.2	2.2	9.5
Hs.80205	AA863383	1469292	1.63	8.44	5.2	3.4	6.2	8.9	2.2	8.9	1.4	4.8
Hs.220317	H38804	191904	3.49	20	5.7	3.7	2.6	7.7	8.9	8.9	2.2	3.5
Hs.146360	AA058453	509641	65.28	416.53	6.4	6.7	7.1	2.9	8.8	8.8	1.3	3
Hs.78867	AA476460	785148	1	4.32	4.3	3.1	0.9	4.8	8.5	8.5	1.7	3.7
Hs.21331	AA486300	842767	5.88	29.74	5.1	2.6	3.1	8.4	6.1	8.4	1.3	4.5
Hs.14559	AA131908	504308	0.55	2.74	5	8.1	2.8	4.7	4.3	8.1	2.4	5.3
Hs.161585	W93709	357364	0.44	2.37	5.4	4.9	2.9	5.7	8.1	8.1	2	4.3
Hs.86945	AA621339	1048804	1.18	6.08	5.1	4.6	0.3	7.8	7.8	7.8	1.7	7.6
Hs.189834	AA443853	784093	3.55	18.23	5.1	5.8	2.5	7.8	4.5	7.8	1.2	3
Hs.61635	AA032221	375682	1.18	4.51	3.8	7.6	1.3	3.2	3.2	7.6	0.7	3.2
Hs.194794	AA429171	769751	0.29	1.54	5.3	4.3	2.8	6.6	7.3	7.3	1.9	3.4
Hs.213265	AA461092	796161	19.35	99.81	5.2	5.8	2.2	7.2	5.5	7.2	2	3.8
Hs.75117	H95638	242952	19.7	93.97	4.8	7.1	1.3	6.3	4.3	7.1	3.4	2.6
Hs.3566	AA489080	824799	1.93	8.86	4.6	4.9	2.1	4.6	6.7	6.7	2.2	3.3
Hs.21577	AA453730	813845	4.47	20.8	4.7	3.6	3	6.7	5.3	6.7	2	3.3
Hs.22049	AA428044	773512	2.29	9.12	4	3.5	6.6	3.9	1.9	6.6	2	4.6
Hs.74090	AA707650	451706	0.72	3.6	5	4.7	2.7	6.2	6.6	6.6	2.7	3.3
Hs.153958	N45313	283312	59.49	228.57	3.8	6.5	1.7	3.3	3.9	6.5	1.5	3.1
Hs.79299	AA863469	1469377	0.41	1.91	4.7	2.9	6.1	3.4	6.4	6.4	1.2	3

Table 1

Hs.194794	H24105	51918	7.2	33.03	4.6	4.3	2.5	5.2	6.3	6.3	1.5	3.4
Hs.6654	AA430575	770082	1.01	3.67	3.6	6.3	1.2	3.6	3.5	6.3	1.6	6.7
Hs.111894	AA676470	882511	0.1	0.39	3.9	4.9	1.2	6.1	3.5	6.1	0.5	3
Hs.98658	AA430092	781047	1.02	4.08	4	3.3	2.2	4.5	6	6	1.9	3.4
Hs.104985	AA448270	782838	0.38	1.36	3.6	3.1	4.3	0.8	6	6	2	12.1
Hs.153667	AA873056	1476053	0.36	1.5	4.2	2	6	3.8	5	6	2.1	6.2
Hs.115474	N46759	277112	2.13	9.39	4.4	4.4	2.6	5.8	4.9	5.8	1.7	3.2
Hs.13340	AA625662	745360	7.39	32.58	4.4	5.2	2.9	3.7	5.8	5.8	1.2	3.4
Hs.173205	AA669758	884301	1.32	4.77	3.6	3.2	3.1	5.7	2.5	5.7	1.3	3.2
Hs.57222	AA455168	813318	1.24	4.88	3.9	4	2.3	5.6	3.8	5.6	1.4	5.1
Hs.194698	AA774665	856289	10.07	45.04	4.5	4.8	2.9	5.5	4.7	5.5	2.5	3.8
Hs.217512	AA644128	845415	8.53	35.06	4.1	4	1.9	5.4	5.2	5.4	1.4	3.3
Hs.216259	AA676460	882510	44.42	169	3.8	4.1	2.1	5.2	3.8	5.2	2.5	4.2
Hs.220318	H11130	47096	3.49	13.59	3.9	4.9	1.8	5.1	3.8	5.1	2.5	3.6
Hs.39504	AA421850	754588	3.37	13.06	3.9	3.6	2.3	5.1	4.6	5.1	1.7	4.6
Hs.99011	AI732747	771290	1.29	4.49	3.5	5	3.2	2.7	3.1	5	1.7	3.4
Hs.110857	AA126951	511632	4.43	17.1	3.9	4.1	2.8	4.9	3.6	4.9	1.5	3.1
Hs.217837	AA454579	809521	1.12	4.14	3.7	3.2	1.9	4.8	4.8	4.8	2.9	3.4
Hs.158164	AA487637	841340	0.1	0.36	3.6	1.7	4.5	4.8	3.2	4.8	2.1	4.3
Hs.169544	AA406505	753252	3.96	12.57	3.2	4.8	1.1	3.4	3.4	4.8	1.5	3.1
Hs.119756	R49144	38816	42.81	129.3	3	3.1	1	4.6	3.4	4.6	3.7	1.5
Hs.179565	AA456608	809557	1.12	4.38	3.9	3	3.6	4.5	4.5	4.5	2.2	3.7
Hs.180877	AA608514	950574	54.46	184.5	3.4	4.2	1.2	4.4	3.7	4.4	2.5	3.1
Hs.94970	R13519	26507	0.29	0.86	3	4.2	0.9	3.8	3.1	4.2	1.7	5.4
Hs.220311	N34055	244077	1.19	3.65	3.1	4.1	0.8	3.8	3.5	4.1	2.9	9.2
Hs.9452	AA156801	502464	0.19	0.61	3.3	4.1	1.5	3.7	3.7	4.1	3.4	2.3
Hs.99185	AA448761	786078	1.53	4.89	3.2	3.7	2.5	3	3.5	3.7	1.7	3.7
Hs.142838	AA456437	788415	9.15	29.82	3.3	3.4	2.9	3.3	3.4	3.4	1.3	3.5
Hs.171740	R61372	37980	0.16	5.54	35.4	1.6	3.7	38	98.4	98.4	0.7	1.2
Hs.136348	AA598653	897910	1.45	30.29	20.8	65.8	2.6	11	3.9	65.8	0.3	0.8
Hs.50382	N73843	296568	0.71	12.18	17.1	50.3	1.7	10.9	5.5	50.3	1.3	1.9
Hs.54460	W69211	343736	0.41	7.28	17.6	47.5	6.6	14.8	1.4	47.5	0.8	0.5
Hs.89626	AA845432	1404774	0.46	7.52	16.4	42.1	7.5	15	1.1	42.1	1	1.8
Hs.83942	R01515	123926	1.51	21.84	14.4	38.3	1.1	14.5	3.8	38.3	0.9	0.5
Hs.78224	AA487797	840493	12.8	182.71	14.3	38	2.5	7.2	9.4	38	1	1.2

Table 1

Hs.59503	AA628462	1032831	0.99	12.19	12.3	32.2	2.1	10.8	3.9	32.2	1	0.9
Hs.59075	W90164	418150	0.69	8.62	12.6	6.2	1.8	31.5	10.8	31.5	2.9	2.9
Hs.154084	AA436943	759173	0.31	3.56	11.6	26.4	1	14.6	4.6	26.4	0.6	0.9
Hs.214449	AA098997	489631	2.33	22.19	9.5	25.3	2.6	5.1	5.1	25.3	1.4	1.3
Hs.58882	AA056013	377692	2.84	26.08	9.2	23.7	4.4	7.6	1.1	23.7	0.8	0.5
Hs.78575	W00491	291255	2.5	27.52	11	23.5	0.8	10.4	9.3	23.5	2.4	1.4
Hs.118787	AA633901	868212	0.23	2.06	8.8	5.3	23.2	4	2.8	23.2	1.7	1.6
Hs.118223	AA442695	759163	0.42	3.93	9.4	21.8	0.8	11	4	21.8	0.4	0.6
Hs.215361	N71028	294535	1.52	12.85	8.5	21.1	1.6	7.8	3.4	21.1	0.6	0.4
Hs.75929	H96738	251685	0.3	2.53	8.6	20.4	3	4.8	6.1	20.4	1.6	1.4
Hs.156110	AA488070	840677	123.26	1312.6	10.6	20.3	4.5	16.8	1	20.3	2.4	0.6
Hs.219709	T83657	113284	0.83	8.28	9.9	13.5	2.4	20.3	3.6	20.3	1	0.7
Hs.7753	R78585	144881	5.38	43.94	8.2	19.3	1.8	6.6	5	19.3	1.1	2.5
Hs.103724	R26960	133273	1.69	13.3	7.9	19	1.5	7.6	3.4	19	1.2	1.2
Hs.103177	W72798	345056	0.21	2.25	10.6	9.7	1.7	17.7	13.3	17.7	2.3	0.9
Hs.89791	N78828	302286	0.55	3.66	6.7	17.1	1.3	5.1	3.3	17.1	1.4	1
Hs.50002	AA680186	430465	1.22	8.76	7.2	17	1.3	6.8	3.6	17	1.2	1.2
Hs.182778	AA873159	1472689	1.13	11.25	10	9.2	2.9	10.8	17	17	1.3	1.9
Hs.174185	T80232	24642	1.21	11.27	9.3	15.9	1.8	16.3	3.2	16.3	0.4	0.6
Hs.114611	N99256	309499	0.6	4.29	7.2	16.2	6.2	4.3	2	16.2	0.9	0.9
Hs.82030	AA664040	855786	10.92	104.02	9.5	9.7	15.6	10.7	2	15.6	1	1.5
Hs.218648	AA428455	772880	0.97	6.56	6.8	15.4	5.1	5	1.5	15.4	1	1.4
Hs.77208	AA448615	785983	0.49	2.91	6	15.1	1.4	4.3	3.1	15.1	1.3	1
Hs.109225	H07071	44477	1.23	10.35	8.4	13.1	1.9	14.9	3.9	14.9	0.6	0.9
Hs.74561	AA775447	878182	6.38	56.03	8.8	13.7	1.9	14.7	4.8	14.7	1.1	2.2
Hs.1908	AA278759	703581	3.44	22.49	6.5	14	3.6	6.4	2.1	14	0.6	0.8
Hs.78183	AA916325	1473304	2.54	21.78	8.6	10.8	2.8	6.9	13.8	13.8	2.3	2.1
Hs.76507	AA625666	745347	2.46	20.65	8.4	13.6	2	6.3	11.7	13.6	1.3	1
Hs.13225	AA683581	505887	3.89	33.49	8.6	9.3	2.8	13.5	8.7	13.5	1.2	2.2
Hs.26179	AA704448	450710	1.56	9.99	6.4	2.5	6.4	13.4	3.3	13.4	2.1	1.6
Hs.196287	AA777187	378488	2.58	15.94	6.2	13	4.3	4.8	2.5	13	0.8	1.2
Hs.258	AA863086	1455566	0.32	2	6.2	12.9	2	5.8	4.2	12.9	1	0.9
Hs.216254	AA431201	782170	1.08	5.91	5.5	1.8	12.8	4.2	3.3	12.8	0.8	1.8
Hs.49587	W48762	325128	0.22	1.32	6	12.5	3.1	6	2.5	12.5	0.9	0.6
Hs.121260	AA757932	396252	0.66	3.91	5.9	12.4	4.2	4.7	2.4	12.4	1.5	1.2

Table 1

Hs.82226	W76584	345616	14.96	107.47	7.2	12.2	0.9	8.7	7	12.2	0.9	0.6
Hs.82226	AA425587	773330	18.73	149.78	8	10.1	1.4	11.7	8.7	11.7	0.8	0.8
Hs.418	AA405631	772425	1.33	7.3	5.5	11.7	4.1	3.2	3	11.7	0.9	0.9
Hs.112449	AA620608	1048696	3.02	21.66	7.2	11.1	2.4	6.8	8.4	11.1	2.3	2.5
Hs.79222	AA878899	1493175	1.98	10.97	5.5	10.9	1.7	6.5	3.1	10.9	1.2	1.7
Hs.17483	AA452060	786308	1.05	5.22	4.9	10.8	2	4	3	10.8	1.4	1.6
Hs.74487	W67174	343072	2.85	14.9	5.2	10.7	2.4	3.6	4.2	10.7	1.3	1.2
Hs.6684	W81135	347035	4.2	28.3	6.7	10.4	1.7	10.7	4	10.7	0.4	0.3
Hs.78996	AA450264	789182	12.15	71.93	5.9	6.1	2.1	10.4	5	10.4	2.6	2.8
Hs.22920	R44985	34442	0.76	3.77	5	10.4	1.9	3.4	4.3	10.4	2	1.6
Hs.6630	N32949	270826	5.53	27.78	5	4.4	1.1	10.3	4.2	10.3	0.6	0.3
Hs.22968	N30348	258101	1.28	7.74	6.1	10.3	3.2	8.7	2	10.3	0.8	1.8
Hs.95243	AA451969	786607	0.5	2.83	5.6	10.2	1.2	4.5	6.6	10.2	2.1	1.7
Hs.196209	AA180100	609530	0.68	3.62	5.3	3.4	1.9	10.2	5.7	10.2	2	2.4
Hs.30089	AA410298	754449	0.57	3.08	5.4	10.1	1.8	6.1	3.7	10.1	0.9	2.2
Hs.8146	AA451609	789204	4.7	27.34	5.8	5.7	2	10.1	5.5	10.1	2.1	2.8
Hs.220283	AA213816	683059	0.93	5.59	6	7.7	2.8	3.5	10.1	10.1	1.2	1.9
Hs.119571	T98612	122159	6.17	34.45	5.6	9.9	2.2	3.1	7.2	9.9	2.2	2.3
Hs.21586	AA282594	713019	1.39	6.58	4.7	5.1	0.7	9.9	3.2	9.9	0.5	1.2
Hs.42699	AA232645	666371	0.46	2.32	5.1	9.9	4.4	3.1	2.9	9.9	0.8	1.3
Hs.216894	AA922700	1474323	8.64	50.98	5.9	6.2	2.7	9.9	4.9	9.9	2.5	2.4
Hs.943	AA459180	810859	0.78	4.54	5.8	9.8	3.4	2.9	7.3	9.8	1.4	1.3
Hs.179661	H37989	191603	30.52	185.49	6.1	9.7	1.6	9.4	3.7	9.7	2.7	2.8
Hs.169833	AA451851	786283	5.74	24.52	4.3	3.9	0.6	9.5	3.1	9.5	1.3	1.3
Hs.198831	H46553	178463	1.14	5.46	4.8	9.5	1.3	5.2	3.1	9.5	0.7	0.6
Hs.170221	N67034	295939	0.92	5.54	6	3.4	8.6	2.5	9.5	9.5	1.1	1
Hs.49625	AA057264	488145	0.47	2.29	4.8	9.2	1.9	4.8	3.3	9.2	0.6	0.6
Hs.20315	AA489743	823696	1.51	7.73	5.1	4.5	4.8	2.1	9.2	9.2	0.8	1.1
Hs.156971	N30256	257452	3.83	21.18	5.5	9.2	6.2	4.6	2.2	9.2	1.1	1.4
Hs.18275	N38891	280000	0.18	0.91	5	4.8	1.9	9.2	4	9.2	1.9	2.4
Hs.2554	AA598652	897906	0.69	3.14	4.5	3.2	1.5	9.2	4.3	9.2	1.8	0.8
Hs.172207	AA054701	509887	38.21	233.23	6.1	9.1	1.4	7.3	6.5	9.1	1.7	1.4
Hs.99636	AI668694	308532	0.31	1.3	4.2	3.1	0.9	9.1	3.6	9.1	1.5	1.2
Hs.215342	AA149854	505076	0.72	3.27	4.5	9.1	3.1	4.9	1	9.1	1	1.2
Hs.116753	N42665	271799	0.26	1.15	4.4	4.3	1.1	9	3.1	9	0.2	1.8

Hs.75485	AA446819	783696	7.6	36.45	4.8	3.2	0.7	6.4	8.9	8.9	0.7	0.8
Hs.79381	R44739	34140	0.54	2.94	5.4	8.8	1.6	5.6	5.7	8.8	0.8	1.5
Hs.10247	R13558	26617	0.5	2.67	5.3	4.8	6	8.7	1.7	8.7	1.6	0.9
Hs.85195	W56334	340722	1.84	10.27	5.6	5.9	1.4	8.7	6.3	8.7	1.9	2.1
Hs.58328	AA478875	754101	0.42	2.21	5.2	5.4	1.8	8.7	5.1	8.7	1.2	1.3
Hs.199430	R13925	26711	7.7	35.2	4.6	8.6	1.5	4.9	3.3	8.6	2.2	1.7
Hs.20711	H63472	209025	4.56	25.66	5.6	2.3	8.2	8.6	3.4	8.6	1.2	1.3
Hs.108660	AA188256	625616	4.98	24.12	4.8	8.4	1.4	4.4	5.1	8.4	0.5	1.8
Hs.99300	AA453028	788355	2.75	11.36	4.1	3.4	1.4	3.2	8.4	8.4	2.4	2.6
Hs.83169	AA143201	589115	0.73	3.59	4.9	6	1.7	8.3	3.7	8.3	0.5	1.3
Hs.34348	N23340	267186	0.69	3.4	4.9	8.2	1.6	4.8	5	8.2	0.9	1.6
Hs.76057	AA281030	711768	3.31	13.47	4.1	3.1	1.7	8.1	3.3	8.1	2.2	1.7
Hs.108623	H38240	191664	1.26	5.96	4.7	8.1	1.6	5.8	3.5	8.1	0.8	0.7
Hs.181373	AA625628	877832	56	252.69	4.5	4.5	0.9	8.1	4.5	8.1	1.9	1.9
Hs.73722	AA478331	740907	11.74	53.28	4.5	8	1.8	5	3.4	8	1.8	2.8
Hs.107968	N95138	293893	1.68	6.99	4.1	3.3	1.6	8	3.6	8	1.9	2.3
Hs.44532	N49629	243741	1.28	6.13	4.8	6.3	8	1.6	3.3	8	1.2	0.7
Hs.215156	AA465148	815036	0.72	3.07	4.3	3.1	3.1	7.9	2.9	7.9	1	2.5
Hs.219990	AA055368	377461	7.02	32.41	4.6	7.9	1.5	4.2	4.8	7.9	0.7	0.8
Hs.114063	AA701457	435080	3.7	20.41	5.5	7.9	1.1	6.9	6.1	7.9	0.9	1.2
Hs.69089	AA252014	684879	2.25	9.97	4.4	7.7	1.9	3.7	4.4	7.7	1.8	2.1
Hs.77522	H42679	183337	5.87	35.02	6	7.7	2.6	7.6	6	7.7	1.4	0.9
Hs.29910	AA464708	810237	5.44	23.96	4.4	3.6	2.9	7.7	3.5	7.7	1	1.5
Hs.44366	N32556	259114	1.96	8.59	4.4	4.6	0.8	7.7	4.4	7.7	1.2	1.4
Hs.184340	W31757	320392	0.95	5.12	5.4	5.3	1	7.7	7.6	7.7	1.7	1.8
Hs.743	H79469	235155	4.25	17.51	4.1	7.5	3.2	3.9	1.8	7.5	0.8	1.1
Hs.198337	AA455597	813513	1.99	8.86	4.4	0.8	3.9	5.6	7.5	7.5	0.7	1.5
Hs.69594	AA504232	825036	1.44	5.91	4.1	3.5	2.2	7.5	3.2	7.5	1	1.6
Hs.102456	T95689	120180	1.01	4.48	4.4	7.5	2.6	4.5	3	7.5	1.3	2.7
Hs.6774	AA115336	501430	0.59	2.88	4.9	7.4	1.9	3.5	6.7	7.4	1.1	1
Hs.216718	H99075	262060	0.48	2.56	5.3	6.4	2.4	7.3	5.2	7.3	1.6	1.8
Hs.217604	AA476494	785342	1.38	5.9	4.3	4.2	1.7	3.8	7.3	7.3	1.5	1.5
Hs.75249	H20652	51532	24.83	132.49	5.3	5.1	2.3	6.7	7.3	7.3	2.6	2.6
Hs.14838	AA404239	758293	2.3	11.07	4.8	7.3	1.9	5.8	4.3	7.3	0.6	0.6
Hs.169895	AA292031	725395	11.66	59.92	5.1	6.1	7.3	5.4	1.8	7.3	0.8	1.8

Table 1

Hs.196209	AA504128	825224	5.36	22.44	4.2	3.7	1.6	7.2	4.2	7.2	1.4	2.3
Hs.68270	AA083207	549035	0.1	0.39	3.9	0.5	7.2	3.7	4.2	7.2	1.5	2.9
Hs.83705	W96506	358689	0.1	0.4	3.9	1.4	7.2	3.1	4	7.2	1.5	1.8
Hs.8966	H58645	204545	1.59	6.32	4	7.2	1.8	3.6	3.3	7.2	1.3	0.9
Hs.170175	AA424984	768523	3.74	19.36	5.2	7.2	2.1	4.4	7	7.2	0.9	1.4
Hs.17518	T95113	120600	2.89	12.96	4.5	5.2	7.1	3	2.6	7.1	0.7	2.3
Hs.214789	N59030	247050	2.44	10.14	4.2	7.1	2.1	4.3	3.1	7.1	1	1.5
Hs.101391	AA488297	897313	0.7	2.89	4.1	3.4	2.5	7	3.5	7	0.7	0.7
Hs.98473	AA677784	431709	2.92	12.42	4.3	7	1.2	5	3.8	7	0.8	1.6
Hs.86905	H05875	43826	1.42	5.65	4	7	1.6	4.1	3.2	7	0.8	1.2
Hs.118162	AA487845	840726	1.2	5.11	4.3	7	4.6	2.2	3.2	7	1	0.3
Hs.23889	AA421603	739094	1.78	8.53	4.8	7	1.4	6.9	4	7	1.2	1.6
Hs.74420	H99257	260336	0.21	0.98	4.7	5.7	1.8	7	4.3	7	2.3	1.9
Hs.76364	W69953	343867	4.36	18.65	4.3	6.9	6.3	3.1	0.9	6.9	1.3	1.8
Hs.98874	AA436479	753076	0.46	1.94	4.2	4.3	3.1	6.9	2.6	6.9	0.9	0.6
Hs.153026	N28536	263916	3.93	19.12	4.9	6.8	2.8	6.7	3.2	6.8	0.6	0.9
Hs.84232	AA490680	823864	1.83	8.04	4.4	6.8	1	4.7	5.2	6.8	1.1	0.8
Hs.171921	AA042990	486591	1.26	5.95	4.7	6.2	1.1	4.8	6.7	6.7	0.8	0.8
Hs.28988	AA291163	700527	5.17	22.99	4.4	6.7	4.8	3.7	2.6	6.7	1.9	1
Hs.95369	AA059347	512417	21.48	109.67	5.1	6.6	1.3	6.3	6.2	6.6	2.4	1.1
Hs.198819	AA459132	814410	1.25	5.98	4.8	1.4	6.1	5.1	6.6	6.6	0.7	0.3
Hs.215584	T64880	66718	0.8	3.86	4.8	4.9	2	5.9	6.5	6.5	2.8	1.9
Hs.5148	N29133	264895	0.59	2.51	4.2	4.3	1.9	6.5	4.2	6.5	0.9	0.9
Hs.32217	AA057378	472186	0.1	0.41	4.1	3.2	6.5	2.2	4.6	6.5	2.8	1.2
Hs.201673	N72259	291348	1.39	5.58	4	6.5	3.3	4.1	2.2	6.5	0.7	1.3
Hs.13014	AA709044	506564	2.52	11.71	4.6	5	2.3	6.4	4.8	6.4	1.9	2.7
Hs.220027	R61845	42659	5.62	24.68	4.4	4.4	1.8	6.4	4.9	6.4	1.8	1.6
Hs.87327	AA460369	796090	0.1	0.38	3.8	4.4	1.5	6.4	3	6.4	0.5	2
Hs.194691	AA172400	595037	16.93	75.44	4.5	5	5.2	1.3	6.3	6.3	1.6	2.1
Hs.194686	AA401224	758304	2.29	8.8	3.8	6.3	2.2	3.2	3.7	6.3	1.8	2.9
Hs.77770	R14443	28823	1.76	7.32	4.2	5.3	1.3	6.3	3.7	6.3	0.9	1.5
Hs.182281	N41826	259350	22.22	98.66	4.4	5.6	1.2	6.3	4.6	6.3	2.4	2.5
Hs.196800	AA136707	490995	0.99	4.58	4.6	5.4	5	6.2	1.8	6.2	1.5	1.9
Hs.5459	AA427970	773469	6.53	31.25	4.8	6.2	2.5	6.2	4.3	6.2	1.4	2.1
Hs.204183	AA504265	825416	2.07	8.44	4.1	6.2	3.9	3.8	2.4	6.2	1.7	0.9

Table 1

Hs.78434	H17047	50794	1.16	4	3.4	3.6	0.6	6.2	3.3	6.2	1.7	2.6
Hs.62275	R69622	142184	0.71	2.8	3.9	4.7	1.9	6.2	3	6.2	1.2	1.8
Hs.56542	AA453477	795191	6.97	30.03	4.3	5.1	2	6.2	4	6.2	1.3	1.9
Hs.35701	R97233	200418	1.1	4.33	3.9	3.1	2.2	6.1	4.3	6.1	2.2	2.5
Hs.114599	AA872420	1472775	0.19	0.87	4.6	6.1	2.9	4.3	5.1	6.1	0.2	1.1
Hs.62692	AA127965	501854	0.86	3.58	4.2	3	1.6	6.1	5.9	6.1	0.5	1.4
Hs.91813	H29295	49963	2.33	9.19	3.9	5.4	1.1	6.1	3.2	6.1	1.4	1.1
Hs.90077	H51705	194214	2.27	8.7	3.8	6.1	2.2	3.8	3.2	6.1	1.5	2.1
Hs.193232	H68107	233909	1.28	5.12	4	5.5	1.3	6.1	3	6.1	1.4	1.5
Hs.217363	R38685	23136	1.22	4.56	3.7	3.7	2.2	6.1	3	6.1	0.9	1.6
Hs.178576	AA442976	809437	2.95	11.6	3.9	6	2	4.2	3.6	6	1.1	1.6
Hs.3090	H48661	207082	1.95	7.4	3.8	4	1.6	5.9	3.6	5.9	1.3	1.6
Hs.85769	AA772816	969914	12.79	53.2	4.2	3.5	1.9	5.3	5.9	5.9	1.5	1.9
Hs.62212	N69913	297748	3.12	12.9	4.1	3.5	1.3	5.9	5.8	5.9	1.3	2
Hs.43756	AA459282	810898	2.57	9.4	3.7	5.8	1.2	3.5	4.2	5.8	1.1	0.8
Hs.42776	H99996	263338	3.96	15.81	4	5.8	1.5	4.3	4.3	5.8	1	1.4
Hs.19056	AI822051	299128	0.71	2.78	3.9	5.8	2.1	4.5	3.4	5.8	1	1.9
Hs.109920	R53928	39813	0.27	0.93	3.4	3.6	0.6	5.7	3.8	5.7	1.4	2.8
Hs.187605	AA135695	501540	4.27	18.36	4.3	2.4	5.5	3.6	5.7	5.7	1.7	1.9
Hs.62245	AA447027	784253	8.81	34.95	4	3.6	1.4	5.7	5.2	5.7	1	1.9
Hs.75117	AA894687	1493390	5.5	21.1	3.8	4	1.3	4.4	5.7	5.7	2	2
Hs.49500	AA190789	627351	1.42	5.32	3.7	5.7	2.1	4.3	3	5.7	1.3	0.7
Hs.166299	T71209	110168	0.74	2.59	3.5	3.2	2.1	3.1	5.6	5.6	1.9	1.4
Hs.182018	AA121428	490232	0.56	1.99	3.5	3.9	1	5.6	3.6	5.6	0.9	0.6
Hs.3416	AA700054	435036	2.73	10.22	3.7	5.6	1.3	3.2	4.8	5.6	2.4	0.8
Hs.95685	AA121778	563701	9.79	37.62	3.8	5	1.1	5.6	3.6	5.6	1.2	1.4
Hs.217611	AA158258	592807	29.71	111.97	3.8	3.1	1.8	5.6	4.5	5.6	1.3	2
Hs.219151	AA453859	813711	1.27	4.63	3.7	3.1	1.7	5.6	4.3	5.6	0.8	1
Hs.22688	R61779	42636	1.14	3.85	3.4	3.6	0.8	5.5	3.7	5.5	0.6	0.9
Hs.197345	AA486207	842802	18.28	67.7	3.7	3.7	1.2	5.5	4.3	5.5	2.5	2.5
Hs.189982(85)		566255	11.58	46.98	4.1	4.2	3.7	5.5	2.8	5.5	2.2	2.1
Hs.61233	AA235347	687625	0.46	1.76	3.8	5.5	3.3	2.8	3.6	5.5	1.5	1.3
Hs.656	W95000	415102	1.29	4.77	3.7	3.3	2.3	5.5	3.6	5.5	2.4	2.3
Hs.78601	AA424441	760148	4.34	15.1	3.5	5.5	1.7	3.3	3.5	5.5	1.6	2
Hs.75511	AA598794	898092	1.29	5.4	4.2	5.5	4.2	4.3	2.8	5.5	0.4	0.6

Table 1

Hs.95351	W96325	361698	0.28	1.07	3.8	3.8	1	5.5	4.7	5.5	0.9	1.8
Hs.168212	T90375	111006	2.5	9.17	3.7	4.2	1.1	5.4	3.9	5.4	0.8	1.5
Hs.106255	N47690	281010	19.07	65.13	3.4	3.9	0.9	5.4	3.4	5.4	0.2	1.8
Hs.127376	R54592	40102	0.14	0.55	3.9	4.9	1.6	3.6	5.4	5.4	1.4	0.7
Hs.114439	N54333	244754	1.79	6.35	3.5	3.9	1	5.4	3.8	5.4	1.2	1.4
Hs.14894	H82891	198815	0.48	1.7	3.5	5.4	1.3	3	4.4	5.4	2	0.9
Hs.29748	R78490	144849	0.39	1.35	3.4	3.1	5.4	1.9	3.3	5.4	0.8	2.8
Hs.46472	N45091	282810	1.27	4.96	3.9	5.4	2.6	3.9	3.7	5.4	1.5	2.9
Hs.216695	N40188	276412	0.35	1.28	3.7	5.4	1.8	3.6	3.9	5.4	1	0.8
Hs.98289	AA620609	1048698	0.8	3.13	3.9	5.1	1.3	3.9	5.4	5.4	2.3	2.1
Hs.82314	N47311	280507	1.04	3.88	3.7	5.4	2.4	3.2	3.9	5.4	0.6	2.5
Hs.23595	AA279657	704410	0.81	2.9	3.6	3	3.6	5.3	2.3	5.3	2.7	2.2
Hs.83795	W33021	321739	1.36	4.81	3.5	3.6	1	4.3	5.3	5.3	0.9	0.7
Hs.97925	AA505150	825833	1.09	3.49	3.2	5.3	1.3	3	3.2	5.3	1.8	2.3
Hs.44257	AA476253	772952	1.75	6.49	3.7	3.3	1.4	5.3	4.8	5.3	0.9	1.6
Hs.161490	N63807	293635	23.31	89.55	3.8	3.5	1.7	5	5.2	5.2	2.1	1.7
Hs.119403	AA733203	399604	0.57	2.25	4	5	2.3	3.3	5.2	5.2	1.5	1.7
Hs.43388	N35187	268385	1.53	4.98	3.3	1.4	5.2	3	3.4	5.2	0.4	0.4
Hs.121599	AA758257	396857	2.54	9.64	3.8	5.2	1.7	4.7	3.6	5.2	1	1.9
Hs.171723	AA457152	810492	3.06	11.5	3.8	3.6	1.2	5.1	5.2	5.2	1.7	1.3
Hs.172865	W72815	344759	1.63	5.98	3.7	4.4	2.1	5.2	3	5.2	2.2	2.7
Hs.155174	W04385	298612	4.25	15.52	3.7	3.7	2.1	5.1	3.7	5.1	0.9	1.6
Hs.101265	AA460963	796123	0.18	0.63	3.5	2.7	3.2	5.1	3	5.1	2.2	2.6
Hs.60054	AA004489	428486	0.64	2.33	3.6	5.1	2.1	3.3	4.1	5.1	0.8	1.1
Hs.29331	W86378	415978	7.96	30.81	3.9	2.9	3.7	3.8	5.1	5.1	2.2	2.8
Hs.146381	AA487651	841352	3.69	13.2	3.6	4.6	1.5	5.1	3.2	5.1	1.3	2.4
Hs.106255	AA620415	951010	16.31	55.37	3.4	3.3	1.3	5.1	3.8	5.1	1	1.9
Hs.192952	H12190	48286	2.26	8.03	3.6	5.1	0.8	4.8	3.6	5.1	2.9	1.8
Hs.110713	R28400	133136	4.81	17.61	3.7	2	3.3	5	4.2	5	2.2	2.5
Hs.75454	H19202	50888	37.27	141.94	3.8	4.4	0.8	5	5	5	1.3	2
Hs.151604	AA416785	731343	53.57	223.8	4.2	5	4	4.7	3	5	2.5	2.7
Hs.18925	AA416816	731236	7.77	27.35	3.5	3.9	1.6	5	3.6	5	1.3	0.9
Hs.215672	AA418510	767313	1.47	5.65	3.8	4.9	2.1	3.3	5	5	0.9	1.5
Hs.196800	H99816	263013	2.7	9.02	3.3	3.3	3.9	5	1.3	5	1.3	2
Hs.194021	R70318	155128	0.64	2.12	3.3	1.5	3.5	5	3.2	5	1	0.7

Table 1

Hs.77897	R17811	31866	14.74	47.14	3.2	3	1.2	5	3.6	5	1.8	1.4
Hs.7947	AA394299	726596	3.3	10.49	3.2	3.2	1.1	3.4	5	5	0.8	1.7
Hs.58609	AA678388	431955	2.68	9.41	3.5	4.9	2	3.6	3.5	4.9	1.5	2.2
Hs.79172	AA404486	772304	234.97	825.58	3.5	4.9	0.9	4.4	3.8	4.9	2.6	2.1
Hs.215816	W78773	415437	2.33	8.34	3.6	3.8	1.8	3.8	4.9	4.9	1.8	2.3
Hs.196172	AA454098	788256	1.39	4.65	3.3	1.5	3.9	4.9	3	4.9	1.5	2.6
Hs.214542	AA447782	813825	0.46	1.6	3.5	1.4	4.9	4.3	3.4	4.9	0.5	1.5
Hs.23054	H17550	50842	2.44	7.92	3.2	3.6	3.2	4.9	1.3	4.9	0.3	1.3
Hs.84926	N50073	282710	2.54	9.29	3.7	3.1	2	4.7	4.9	4.9	1.3	1
Hs.180062	AA187014	624360	7.51	29.74	4	4.6	4.8	4	2.4	4.8	0.6	1.2
Hs.84926	AA171899	610374	3.34	11.02	3.3	3.2	1.2	4.8	4	4.8	1	1.3
Hs.43498	AA416767	731311	0.82	2.91	3.5	3.1	4.1	2.1	4.8	4.8	1.7	1.1
Hs.7187	N91677	293191	3.95	13.46	3.4	3.3	2.3	3.2	4.8	4.8	1.3	1.7
Hs.82276	AA258735	668007	3.79	14.16	3.7	4.4	1.2	4.8	4.6	4.8	1.2	1.6
Hs.172665	AA633577	856535	11.06	34.66	3.1	3.5	0.8	4.8	3.4	4.8	1.4	1.8
Hs.29549	R91686	196577	0.69	2.41	3.5	3.7	3.3	4.8	2.2	4.8	1.9	0.6
Hs.19673	AA701351	435488	3.36	11.26	3.3	4.7	1.2	3.5	3.9	4.7	1.4	2.4
Hs.29475	AA136532	490945	0.79	2.54	3.2	3.2	1.3	4.7	3.6	4.7	1	1
Hs.104716	AA708440	506016	0.55	1.95	3.6	4.7	3.9	1.7	3.9	4.7	1.6	0.3
Hs.61153	AA251927	684655	35.19	110.1	3.1	4.7	0.9	3	3.8	4.7	0.9	2.1
Hs.213519	N40582	258167	11.48	35.35	3.1	3.2	1.2	4.7	3.3	4.7	1.2	1.5
Hs.153221	N59206	288695	5.27	17.25	3.3	4.1	1.2	4.7	3.1	4.7	0.8	1.3
Hs.75824	T63171	79710	17.21	54.92	3.2	3.3	1.2	4.7	3.6	4.7	1	1.3
Hs.166684	AA464529	810506	0.74	2.67	3.6	3.5	2.3	4.7	4	4.7	1.9	1.6
Hs.95044	AA010805	359823	0.81	3.1	3.9	4.6	4.3	3.6	2.9	4.6	1.5	1.7
Hs.10620	R24880	131988	3.26	9.86	3	3.3	1	4.6	3.2	4.6	1.7	2.3
Hs.79428	N25150	261518	2.38	8.39	3.5	4.6	1.8	4.4	3.3	4.6	2.2	3
Hs.76329	H23255	52431	2.51	7.74	3.1	3.3	1	4.6	3.4	4.6	1	0.9
Hs.38497	AA453527	795427	0.64	1.92	3	3.3	1.1	4.5	3.1	4.5	2	1.9
Hs.50131	AA460957	796126	1.88	7.05	3.8	3.4	2.7	4.5	4.4	4.5	1.5	2.7
Hs.15970	AA156982	502527	0.13	0.45	3.5	4.5	4	2.2	3.1	4.5	1.2	1.2
Hs.177998	AA443063	837923	7.96	23.44	2.9	3.3	0.8	4.5	3.3	4.5	0.7	1.5
Hs.182579	R69307	141623	1.69	5.7	3.4	4.5	2.2	3.3	3.5	4.5	0.6	1.2
Hs.22202	N30959	266093	2.8	8.49	3	3.5	0.6	4.5	3.6	4.5	0.7	2.1
Hs.98534	AA427858	773464	6.58	23.49	3.6	3.3	2.1	4.5	4.4	4.5	2.2	2.2

Table 1

Hs.85524	AA428229	760282	1.57	4.84	3.1	4.4	1.1	3.3	3.5	4.4	0.9	1.2
Hs.117582	H01610	149386	1.21	4.48	3.7	4.3	1.9	4.4	4.1	4.4	2.6	1.7
Hs.153612	W25202	308682	5.73	16.42	2.9	4.4	0.7	3	3.3	4.4	1.2	2.1
Hs.46819	N48089	281802	1.2	3.67	3.1	3.3	1.2	4.4	3.4	4.4	1.3	1.1
Hs.8128	W69544	343609	1.32	4.63	3.5	4.3	1.2	4.4	4.2	4.4	1.9	2
Hs.172009	AA733040	399536	67.82	227.76	3.4	2.3	3.8	3.1	4.3	4.3	1.4	2.3
Hs.219713	AA489707	824377	10.09	31.83	3.2	3.5	1.4	4.3	3.5	4.3	0.3	2.6
Hs.61628	AA487552	841399	7.43	22.2	3	4.3	0.9	3.5	3.3	4.3	0.6	0.9
Hs.16695	H96834	250883	1.47	4.35	3	3	1.3	3.2	4.3	4.3	1.7	2
Hs.202900	H11838	47900	8.45	27.8	3.3	3.4	1.8	4.3	3.6	4.3	2.2	2.1
Hs.100431	AA406115	753794	1.24	4.34	3.5	4.3	3.6	3.6	2.5	4.3	1.1	1.9
Hs.103707	AA159552	592592	0.26	0.79	3	3.6	0.9	4.3	3.4	4.3	2.1	1.7
Hs.55356	AA278512	703384	5.63	18.11	3.2	4.2	1.2	3.2	4.2	4.2	1.4	1.3
Hs.17132	AA021463	364194	11.18	35.47	3.2	4.2	1.4	3.2	3.8	4.2	0.4	0.8
Hs.22531	AA455164	813310	2.11	6.57	3.1	1.9	3	4.2	3.3	4.2	1.9	2.9
Hs.218364	AA045`40	487141	1.51	4.78	3.2	3.6	0.7	4.1	4.2	4.2	0.7	0.9
Hs.17109	N72450	245277	0.4	1.35	3.4	3.6	4	4.2	1.9	4.2	0.9	0.6
Hs.25132	AA167129	609377	0.75	2.56	3.4	3.9	1.7	4.2	3.8	4.2	0.8	0.5
Hs.216775	W85697	415700	1.47	4.6	3.1	4.1	0.7	4.2	3.5	4.2	2.8	1.4
Hs.56006	W47416	324322	1.35	4.01	3	3.5	0.8	4.2	3.3	4.2	0.7	1
Hs.46541	AA446901	784264	5.96	16.97	2.8	3.3	0.7	4.2	3.1	4.2	1.4	1.9
Hs.189952	R10103	128880	2.81	7.77	2.8	3.1	0.6	4.2	3.2	4.2	0.8	1.2
Hs.1192	N54344	244767	1.6	5.41	3.4	2.3	3.3	3.8	4.1	4.1	1.5	1.4
Hs.44216	N30728	257436	0.95	3.14	3.3	4.1	1.1	4	3.9	4.1	1.5	1.2
Hs.7174	AA418610	767387	0.51	1.62	3.2	4.1	1.4	3.3	3.9	4.1	2.8	2.9
Hs.15318	R76263	144777	6.67	19.66	2.9	4.1	0.8	3.8	3	4.1	1.4	2.3
Hs.18136	H24126	51826	2.04	6.26	3.1	3.5	1.5	4.1	3.1	4.1	1.1	1.5
Hs.28726	H98534	250667	1.61	5.02	3.1	3.3	4	3	2.1	4	2.5	1.6
Hs.98473(85)		279629	0.64	1.95	3	4	1.2	3.9	3	4	1.3	1.3
Hs.83795	AA393214	727551	4.27	14.15	3.3	3.9	1.4	3.9	4	4	0.8	1
Hs.21599	AA486055	843283	3.17	9.66	3	4	1.4	3.3	3.5	4	1.3	2.5
Hs.61345	AA127805	490329	0.1	0.33	3.3	3.1	3.3	2.9	3.9	3.9	2.2	1.3
Hs.28838	R68091	138337	1.18	3.55	3	1.5	3.5	3.1	3.9	3.9	1.2	1.3
Hs.206457	H12845	148763	4.22	11.54	2.7	3.9	0.7	3.1	3.2	3.9	0.5	0.8
Hs.88556	AA465424	814080	17.05	51.16	3	3.1	1.5	3.6	3.9	3.9	1.6	1.6

Table 1

Hs.102383	H98987	261441	2.52	7.01	2.8	3.8	0.8	3.3	3.2	3.8	1	1.6
Hs.88179	AA456403	813286	1.07	3.61	3.4	2.9	3.3	3.8	3.5	3.8	1.2	2.9
Hs.26041	H11151	47418	2.37	7.38	3.1	3.7	1.8	3.3	3.7	3.7	1.8	1.5
Hs.8110	AA459743	796323	12.21	35.04	2.9	3.3	1.3	3.7	3.3	3.7	2.2	2.2
Hs.61241	AA025082	365336	2.5	7.49	3	3.4	1.5	3.7	3.4	3.7	1.7	2
Hs.29299	R73354	157856	2.92	8.57	2.9	3.3	1.6	3.1	3.7	3.7	1.1	1.6
Hs.24040	T49657	67769	0.12	0.4	3.3	3.5	3.6	2.3	3.6	3.6	1.2	2.8
Hs.127356	N21633	266135	1.55	4.41	2.8	3.4	1.2	3.6	3.2	3.6	1.4	1.4
Hs.74571	W45572	323474	2.2	5.81	2.6	3.6	0.3	3.3	3.4	3.6	1.3	1.5
Hs.179631	AA436097	730739	37.7	101.88	2.7	3.3	0.6	3.4	3.5	3.5	0.7	2.7
Hs.179774	H65395	210405	57.67	183.07	3.2	3.4	2.8	3.3	3.2	3.4	1.2	1.9
Hs.2430	AA444129	757165	0.1	1.34	13.4	0.2	0.7	25.8	26.8	26.8	22.1	32.4
Hs.159604	AA464147	810321	0.89	4.02	4.5	0.6	3.2	1.2	13.2	13.2	3.2	6.2
Hs.159626	AA430241	781089	22.75	96.52	4.2	2.8	2.2	8.7	3.2	8.7	3.1	4.2
Hs.28974	AA447459	784190	0.28	1.22	4.4	8	1	6.2	2.3	8	3.7	5.9
Hs.62273	AA620485	951241	10.02	42.51	4.2	2.9	2.2	7.1	4.8	7.1	3.6	3.1
Hs.83848	AA663983	855749	140.71	450.26	3.2	6.3	0.8	3.7	2	6.3	3	3.9
Hs.186814	AA700879	452363	0.94	3.22	3.4	2.2	2.2	6.2	3.2	6.2	3	3.4
Hs.77550	AA459292	810899	2.81	11	3.9	1.6	2.5	5.9	5.7	5.9	5.2	3.3
Hs.76394	AA626255	745542	0.46	1.81	3.9	5.9	2.7	4.4	2.6	5.9	3.5	3.8
Hs.146354	H69143	212165	46.26	146	3.2	4.6	0.3	5.1	2.7	5.1	3.4	3.7
Hs.77204	AA701455	435076	2.52	9.01	3.6	2.3	2.8	5	4.2	5	5.1	5.5
Hs.153998	AA019482	363086	7.96	23.68	3	1.1	1.8	4.8	4.2	4.8	3.1	3.3
Hs.216819	AA452317	786504	1.82	5.05	2.8	0.6	4	2.8	3.7	4	3.7	6.5
Hs.12045	AA701981	436106	2.49	7.17	2.9	3.5	1.9	2.3	3.8	3.8	3.5	4.5
Hs.65370	AA599574	1069733	0.19	1.82	9.6	17.6	17.6	1.3	1.7	17.6	1.8	3.6
Hs.76325	T70123	80948	21.65	160.43	7.4	12.2	1.8	14.9	0.7	14.9	3.2	0.5
Hs.218619	H84229	219676	0.1	0.5	5	14.9	0.7	3.4	1	14.9	2.5	3.8
Hs.79274	AA451895	786680	18.64	132.3	7.1	14.3	1.9	9.2	3	14.3	1	4
Hs.20621	AA464569	810560	0.53	3.77	7	2.6	1	13.9	10.7	13.9	1.3	3.3
Hs.21454	AA844124	1388373	0.27	1.35	4.9	3	1.2	1.6	13.9	13.9	3.3	0.8
Hs.105806	AA701652	433567	0.59	3.08	5.2	2.8	13.3	3.8	1.1	13.3	1.1	3.6
Hs.182167	N73429	284661	1.21	5.7	4.7	1.2	1.3	12.8	3.6	12.8	3.4	1.3
Hs.30464	AA520999	826273	2.9	15.35	5.3	3.8	2.1	12.7	2.6	12.7	3.7	2.8
Hs.80988	R62603	138991	1.33	6.33	4.8	10.5	2.4	1.6	4.5	10.5	2.6	3.7

Table 1

Hs.172803	T53773	68988	0.17	0.85	5.1	10.3	1.2	6.5	2.4	10.3	1.4	6.3
Hs.198574	AA188761	626206	4.34	24.18	5.6	3	2.9	10.1	6.3	10.1	1.7	3.1
Hs.76391	AA456886	815542	1.95	8.94	4.6	2.9	3.7	2	9.8	9.8	1.5	4.4
Hs.189920	AA001227	427811	0.98	3.58	3.7	9.3	0.9	3.6	0.9	9.3	1.7	3.6
Hs.75671	H15597	49389	0.69	3.16	4.6	9	1.5	5.9	1.9	9	2.3	11.7
Hs.198132	AA718910	1292432	1.05	4.91	4.7	8.2	1	7.3	2.2	8.2	0.7	5.5
Hs.54946	N93438	307249	1.1	4.72	4.3	0.5	8	2.5	6.1	8	1.1	5.9
Hs.151513	AA775378	878689	0.98	4.23	4.3	8	0.9	6.8	1.6	8	1.5	5
Hs.97977	AA405690	742952	4.81	21.9	4.6	2.8	2	5.5	8	8	2.4	3.2
Hs.18457	AA167381	595697	0.93	3.84	4.1	7.9	1.2	5.5	1.9	7.9	1.5	3.3
Hs.5199	AA460432	796469	1.41	6.9	4.9	2.4	2.7	7.9	6.6	7.9	3	5.2
Hs.217402	H66023	210982	3.64	13.39	3.7	7.8	1.9	1.8	3.3	7.8	1	3.2
Hs.1600	AA629692	884425	32.05	127.49	4	3.9	1.9	7.7	2.4	7.7	1.7	3.5
Hs.14379	AA458509	811562	1.82	6.1	3.4	7.3	0.9	4.1	1.1	7.3	1.5	3.5
Hs.92395	N30751	257955	1.92	7.68	4	2.7	3	7.3	3	7.3	2.6	3.5
Hs.143434	R38995	24884	0.14	0.49	3.4	4.5	0.7	7.2	1.3	7.2	1	4
Hs.179735	R91953	195162	0.72	2.52	3.5	3.2	1.4	2.5	7.1	7.1	2.2	4.8
Hs.46967	AA425175	772925	6.55	25.08	3.8	0.6	2.9	4.9	7	7	2.2	3
Hs.78853	H15111	49464	0.39	1.36	3.5	2.7	1.2	6.9	3.3	6.9	1.2	9.2
Hs.196837	AA450189	789147	2.01	8.17	4.1	6.9	1.1	5.8	2.4	6.9	2.9	4.4
Hs.77793	AA078778	526282	0.43	1.4	3.3	6.8	0.9	3.8	1.6	6.8	1.9	6.6
Hs.14231	AA283629	713230	21.51	78.96	3.7	4.3	0.9	2.7	6.7	6.7	3.1	2.2
Hs.75692	AA894927	1493527	2.02	7.69	3.8	3.6	2.7	6.4	2.5	6.4	1.3	6.3
Hs.101047	AA026102	366893	0.33	1.08	3.3	4.8	0.7	6.2	1.5	6.2	2	7.1
Hs.159142	R56562	40887	0.54	1.97	3.7	5.3	1.9	6	1.5	6	1.3	3.2
Hs.167017	W01458	298231	1.46	4.55	3.1	6	1.7	3.1	1.6	6	1.1	3.4
Hs.203881	H98742	261522	0.2	0.79	4	5.5	2.1	6	2.4	6	1.3	3.1
Hs.23763	AA194819	664968	1.46	4.8	3.3	0.7	2.3	4.3	6	6	3	2.4
Hs.95835	AA464688	810218	0.76	2.45	3.2	1.7	5.9	1.5	3.7	5.9	1.2	3.6
Hs.17184	W70065	343974	0.53	1.62	3	5.9	0.7	3.7	1.8	5.9	3.1	1.5
Hs.220129	AA465286	815051	1.09	3.21	3	5.9	1.3	3.2	1.5	5.9	0.8	3.4
Hs.30941	R92452	196348	0.35	1.04	3	5.9	0.7	3.9	1.5	5.9	1.7	5.8
Hs.6259	AA424317	767059	0.1	0.3	3	5.8	1.6	3.7	0.9	5.8	0.5	3
Hs.217678	AA115558	491615	1.42	4.38	3.1	2.4	1	5.7	3.2	5.7	1.4	3.1
Hs.12017	AA443004	811766	1.41	4.62	3.3	3.3	5.6	1.8	2.4	5.6	1.4	5.1

Table 1

Hs.74711	AA757464	395898	16.1	58.49	3.6	5.6	1.9	4.4	2.7	5.6	0.3	3.3
Hs.77899	W58092	341328	2.49	8.81	3.5	5.6	1.3	4.9	2.4	5.6	1	6.9
Hs.15159	AA455042	812244	11.71	40.7	3.5	2.2	2.6	3.6	5.5	5.5	2.2	3.7
Hs.197278	AA425419	773322	2.86	9.83	3.4	5.5	1.1	5.5	1.7	5.5	1.1	6.3
Hs.6111	AA019774	363590	0.11	0.36	3.4	5.4	2.1	3.5	2.6	5.4	2.2	3.7
Hs.61635	AA432075	784130	1.15	3.71	3.2	5.4	1.4	2.4	3.7	5.4	0.9	3.4
Hs.109304	H67282	229560	4.04	13.76	3.4	2	2	5.3	4.4	5.3	3.3	1.3
Hs.1578	AA460859	796694	5.49	17.22	3.1	1.4	2.6	3.2	5.3	5.3	1.4	3.5
Hs.180903	T90560	110744	1.01	3.54	3.5	1.8	2.1	4.8	5.2	5.2	1.3	3.6
Hs.174051	H58452	206370	0.51	1.77	3.4	1.9	2.6	5.2	4.1	5.2	1.5	9.2
Hs.131189	AA165313	594693	2.03	6.61	3.3	1.8	2.3	3.7	5.2	5.2	1.4	4.6
Hs.66394	H17158	50188	7.07	20.19	2.9	5.2	0.5	3.1	2.7	5.2	1.1	3.1
Hs.216674	H18716	51041	0.18	0.53	2.9	2.1	1.7	3.1	5	5	1.1	3.2
Hs.44892	AA137144	491184	1.81	4.64	2.6	1.6	0.6	3.2	4.9	4.9	1.6	3.3
Hs.13261	R38899	25162	0.81	2.37	2.9	4.6	0.6	4.9	1.6	4.9	1.6	3.4
Hs.214520	R95684	199337	1.91	6.34	3.3	1.7	2.3	4.4	4.8	4.8	2.7	3.2
Hs.44155	AA424504	767068	1.05	3.43	3.3	2.3	4.8	2.1	3.9	4.8	2.8	6.1
Hs.218928	AA427815	773421	1.44	4.41	3.1	3.2	1.3	3	4.7	4.7	1	3.6
Hs.106843	AA426588	768172	1.97	5.63	2.9	1.4	1.7	4.7	3.6	4.7	2.7	5
Hs.187693	AA488898	824889	1.11	2.75	2.5	1.2	0.9	3.1	4.7	4.7	2.6	3.3
Hs.32425	AA488889	824886	0.39	1.25	3.2	4.7	1.8	4.2	2.2	4.7	1.3	3
Hs.151738	T64837	22040	0.3	0.76	2.5	4.6	0.8	3.2	1.5	4.6	1.7	3.3
Hs.69749	AA001536	361996	0.34	1.01	3	4	1.2	4.6	2.2	4.6	0.7	4.1
Hs.69517	AA447522	782575	1.47	4.6	3.1	1.7	3.5	2.9	4.5	4.5	1.8	5.6
Hs.47378	AA406456	753198	1.85	4.87	2.6	1.3	1.7	3	4.5	4.5	1.1	3.4
Hs.169329	AA421023	730361	2.73	7.48	2.7	0.9	4.5	2.1	3.5	4.5	2.9	4.7
Hs.9659	AA490509	824419	0.81	2.06	2.5	1	4.5	1.2	3.5	4.5	3	3.4
Hs.16743	T90363	110988	1.3	3.58	2.8	4.4	0.9	4	1.7	4.4	1.1	3.1
Hs.88663	AA461460	796623	0.87	2.93	3.4	2.4	2.5	4.1	4.4	4.4	1.9	3.2
Hs.19699	AA425757	773217	0.15	0.42	2.7	2.4	1	4.3	3	4.3	0.9	3.6
Hs.214433	AA463446	811770	0.21	0.61	2.9	3.6	1.3	4.3	2.5	4.3	1.2	4.1
Hs.204802	AA777488	449112	147.1	365.45	2.5	4.1	0.8	3.5	1.5	4.1	3.2	1.4
Hs.40421	N36853	273394	0.9	2.4	2.7	2.1	1.2	3.3	4	4	2.8	3.4
Hs.14355	W03687	297439	9.41	24.65	2.6	3	1.6	4	1.9	4	1	3.7
Hs.38114	AA458528	811590	1.77	5.31	3	1.6	2.5	4	3.9	4	1.2	3.6

Table 1

Hs.83081	AA100037	525799	0.16	0.44	2.8	1.6	2.5	3.9	3	3.9	3	4
Hs.9029	AA676625	454970	1.34	2.57	1.9	0.2	3.2	0.3	3.9	3.9	3.3	1.3
Hs.479	AA626178	745249	0.97	2.53	2.6	3.1	1.2	3.9	2.2	3.9	1	5.2
Hs.118962	W05607	299360	2.67	8.16	3.1	3.2	2.5	3.8	2.6	3.8	1.6	3.2
Hs.5092	AA894577	1492304	3.37	10.22	3	2.8	1.8	3.7	3.8	3.8	2.3	7
Hs.204347	W42459	323077	3.43	10.9	3.2	3.2	2.8	3.8	2.9	3.8	1.8	3.3
Hs.90303	H37774	190491	0.94	2.42	2.6	3.7	1.1	3.8	1.7	3.8	1.3	3.3
Hs.74519	AA434502	770880	1.2	3.74	3.1	2.8	2.4	3.5	3.7	3.7	3.1	2.1
Hs.206507	W20458	303099	0.23	0.64	2.8	3.1	1.7	2.6	3.7	3.7	1.3	4.1
Hs.141296	W95279	358083	1.66	4.14	2.5	3.7	1.4	3.2	1.7	3.7	1.2	4.2
Hs.125078	AA131526	503715	2.31	6.14	2.7	3.6	1.4	2	3.6	3.6	1.7	3.2
Hs.18552	N57530	279915	2	5.37	2.7	3.5	1.5	2.3	3.4	3.5	2.2	4.2
Hs.70333	R34584	136534	2.94	7.29	2.5	1	3.5	2	3.4	3.5	2.6	4.1
Hs.180320	AA600214	949988	4.25	10.24	2.4	3.1	3.5	1.7	1.4	3.5	2	3.2
Hs.182877	AA872436	1475987	5.68	14.99	2.6	1.5	3.5	3.3	2.2	3.5	2.1	3.3
Hs.14839	AA477428	740672	7.91	22.77	2.9	3.5	2	3.3	2.8	3.5	1.2	3
Hs.21879	R98485	201168	1	2.61	2.6	3.1	2.2	3.4	1.6	3.4	0.8	3
Hs.47359	N51883	282144	21.99	43.7	2	0.5	0.9	3.4	3.2	3.4	1.9	4.8
Hs.215766	H94929	230235	3.17	8.97	2.8	3.2	2.2	2.7	3.2	3.2	1.3	3.7
Hs.34665	AA431749	782277	0.29	0.61	2.1	1.2	3.1	0.8	3.2	3.2	2.6	3.9
Hs.142495	AA443971	757210	6.29	16.27	2.6	2.9	1.3	3	3.2	3.2	5.1	1.6
Hs.161833	AA417737	752704	0.1	0.24	2.4	2	1.4	3.1	3.1	3.1	0.5	4.2
Hs.46882	N48816	279504	1.65	24.96	15.1	8.8	2.7	48.1	0.8	48.1	1.1	0.8
Hs.13251	T89094	22355	1.21	15.41	12.7	36.2	2.5	9.1	3	36.2	0.8	0.4
Hs.2256	AA031513	470393	1.36	13.26	9.8	30.3	2.5	1.6	4.7	30.3	0.8	1.4
Hs.29352	W93163	357031	1.02	10.35	10.1	29.6	2.9	5.2	2.8	29.6	1.1	2
Hs.31446	H16903	50562	5.99	59.38	9.9	28.8	0.5	7.3	3	28.8	0.3	0.3
Hs.15432	W69878	344139	0.77	7.39	9.6	28	1.7	7.4	1.4	28	1	1.4
Hs.85950	AA194646	665033	0.1	0.92	8.8	2	27.7	4.1	1.6	27.7	0.8	0.8
Hs.87409	AA464630	810512	0.88	7.12	8.1	24.8	1.1	3.7	2.8	24.8	1	0.8
Hs.6957	R42317	29927	0.59	5.76	9.8	11.6	2.6	24.4	0.7	24.4	2	0.6
Hs.41271	N51859	281908	0.73	7.24	10	23.9	1.3	11.9	2.8	23.9	1.4	0.8
Hs.113264	AA706226	1240116	1.43	10.66	7.4	23.8	1.2	3.2	1.5	23.8	0.8	1.1
Hs.24194	AA453816	813757	0.71	5.48	7.8	23.8	1.6	4.7	1	23.8	1.3	0.8
Hs.22158	AA707853	413056	0.1	0.72	7.2	1.2	3.3	0.9	23.4	23.4	1.8	0.6

Table 1

Hs.75379	AA453823	813678	1.02	7.13	7	1.6	0.4	3.1	22.8	22.8	1.6	2.4
Hs.4758	AA007419	429349	1.1	8.84	8	21	2.4	6.8	1.9	21	1.4	0.8
Hs.216036	W48852	324951	0.32	2.33	7.2	21	2	3.6	2	21	1.5	0.9
Hs.219143	H40964	177074	0.47	4.27	9.1	2.2	1.1	12.4	20.6	20.6	1	2.3
Hs.27695	R26977	133303	2.16	16.03	7.4	19.5	1.3	6	3	19.5	0.7	0.6
Hs.89791	T99055	122762	0.74	4.78	6.5	19.2	0.9	3	2.9	19.2	0.8	0.6
Hs.215170	T55770	73638	3.45	26.01	7.5	1	1.9	8.8	18.3	18.3	1.2	2
Hs.219530	AA452404	787893	3.36	31.88	9.5	15.1	2.9	18.1	1.9	18.1	1.4	1.1
Hs.82212	AA132090	504226	2.18	14.72	6.8	18.1	2.4	5.2	1.4	18.1	0.5	0.3
Hs.80424	AA448599	785975	1.48	9.05	6.1	18.1	1.2	4.5	0.6	18.1	2.8	0.8
Hs.10760	T60482	78921	4.64	28.54	6.2	17.8	0.8	4.4	1.6	17.8	0.6	0.7
Hs.93913	N98591	310406	0.25	1.67	6.6	17.6	2.7	5.3	0.9	17.6	1.1	0.7
Hs.75256	AA017417	361323	3.71	35.37	9.5	17.5	2	16.5	2	17.5	0.3	0.3
Hs.215385	W93067	414994	0.57	3.73	6.5	17.5	1.8	4.6	2.1	17.5	1.4	1
Hs.82848	H00756	149910	0.91	6.23	6.9	17.1	2.6	5.5	2.4	17.1	0.6	1.9
Hs.155935	AA464711	810242	1.32	8.89	6.7	16.6	1.8	7.2	1.3	16.6	0.7	0.8
Hs.109225	H16637	49164	0.64	5.31	8.3	16.1	1.5	12.9	2.8	16.1	1.3	1.7
Hs.8904	AA486747	841046	5.51	32.32	5.9	15.9	1.1	5.8	0.7	15.9	0.4	0.3
Hs.171847	AA447574	782668	0.7	4.22	6.1	15.8	2	4.7	1.7	15.8	0.9	0.7
Hs.7594	AA406551	753467	0.64	4.19	6.6	15.7	2.6	6.8	1.2	15.7	0.6	1.2
Hs.154762	H97597	260696	5.65	35.95	6.4	15.7	2.9	4.7	2.2	15.7	0.5	1.5
Hs.48730	AA406428	753411	0.1	0.67	6.7	15.7	2.8	5.7	2.5	15.7	0	0.3
Hs.89791	H04382	149373	0.46	2.61	5.6	15.2	1	3.4	2.8	15.2	0.4	0.2
Hs.196000	AA464354	810142	16.66	107.18	6.4	2.2	15.1	3	5.5	15.1	1.1	1.9
Hs.194693	T98394	122063	0.79	4.59	5.8	14.1	2.3	4.7	2.2	14.1	1.1	0.9
Hs.54985	AA418846	768031	0.1	0.59	5.9	8.4	0.9	14.1	0.4	14.1	2.2	0.7
Hs.154762	AA251800	684661	3.82	19.81	5.2	13.8	2.2	3.2	1.5	13.8	0.5	1.1
Hs.169965	AA598668	898258	0.92	5.09	5.5	13.6	1	6.7	0.8	13.6	0.5	1.4
Hs.83450	AA001431	362059	2.27	16.42	7.2	13.4	11.8	2.6	1.1	13.4	1.6	0.8
Hs.74647	AA427667	770014	9.12	43.55	4.8	13.2	1.4	3.6	0.9	13.2	0.5	0.3
Hs.69298	AA099288	489794	0.72	3.85	5.3	12.9	4.4	2.1	2.1	12.9	1.5	1.6
Hs.12844	AA004664	428773	0.88	5.1	5.8	6.1	1.7	12.8	2.7	12.8	2.2	1
Hs.160032	AA148793	491367	0.97	5.23	5.4	12.2	1.9	4.5	3	12.2	1.1	1.1
Hs.132959	R06900	126650	0.9	5.03	5.6	2.3	2.9	12.1	5	12.1	2	1.9
Hs.152175	AA757351	1326920	1.32	6.87	5.2	6	1.4	12.1	1.2	12.1	0.4	0.4

Table 1

Hs.103779	N47773	277492	0.41	1.94	4.8	1.5	1.9	12.1	3.5	12.1	1.9	1.9
Hs.76506	W73172	344589	9.43	46.53	4.9	12	2.3	4.4	0.9	12	0.7	0.7
Hs.186494	AA001611	427806	0.56	2.61	4.6	11.9	1.7	3.4	1.5	11.9	1	1.4
Hs.79015	H23979	51363	1.63	9.54	5.9	11.9	0.8	8.3	2.4	11.9	0.8	0.6
Hs.118397	AA490684	823851	1.08	5.53	5.1	2.6	3.8	2.1	11.9	11.9	1.2	1.8
Hs.160786	AA676466	882522	3.69	16.95	4.6	0.8	2.6	3.1	11.9	11.9	2.7	0.9
Hs.204234	W69648	343871	0.1	0.49	4.9	11.8	4	1.1	2.7	11.8	0.9	1.4
Hs.186599	W15274	322568	0.99	4.34	4.4	1.8	0.6	11.8	3.2	11.8	1.2	1.1
Hs.219798	W31245	306513	0.81	4.08	5	11.8	1.9	5.1	1.4	11.8	1.2	0.7
Hs.99087	AA446885	784225	2.24	13.03	5.8	7.4	1.7	11.8	2.4	11.8	0.9	0.6
Hs.220220	W60701	341774	7.96	50.25	6.3	1.8	11.8	2.8	9	11.8	2.2	2.6
Hs.170040	AA455210	810010	1.05	6.36	6.1	11.4	1	9.5	2.3	11.4	1	0.9
Hs.199101	T97782	121981	0.35	1.7	4.9	11.3	1.5	5.3	1.2	11.3	0.5	0.9
Hs.213529	R68634	138496	0.45	2.15	4.8	11.3	1.9	4.8	1.2	11.3	0.6	0.9
Hs.219961	AA099554	489755	0.6	2.96	5	11.2	2.8	3.3	2.6	11.2	1.5	2.3
Hs.220204	AA287187	701710	0.93	5.04	5.4	6.2	2.1	11.1	2.3	11.1	0.6	0.5
Hs.77443	T60048	81289	16.47	72.05	4.4	11.1	1	3.8	1.6	11.1	1.3	0.5
Hs.118397	AA490684	823851	1.06	5.07	4.8	2.2	4.7	1.2	10.9	10.9	1	1.3
Hs.72484	AA487252	841492	4.9	23.57	4.8	3.3	2.8	10.9	2.3	10.9	0.9	0.4
Hs.178144	W04744	298766	0.45	2.7	6	9.2	2.3	10.7	1.7	10.7	1.2	0.6
Hs.212635	AA521439	826194	0.98	4.98	5.1	10.7	1.9	5.8	1.8	10.7	1.1	0.6
Hs.164568	AA009608	365515	2.07	11.71	5.7	8.7	0.8	10.6	2.6	10.6	0.7	0.5
Hs.26040	R56123	41391	3.67	15.02	4.1	0.6	0.5	10.6	4.7	10.6	1.1	0.7
Hs.99258	AA451886	786657	1.27	5.39	4.3	10.5	0.7	2	3.8	10.5	0.6	0.4
Hs.98873	AA436456	753028	0.75	3.22	4.3	2.3	1.4	10.5	3	10.5	1	1.3
Hs.23262	AA701545	435858	2.95	14.35	4.9	10.4	1.8	4.8	2.4	10.4	0.7	0.5
Hs.173609	R96568	199635	23.64	92.3	3.9	0.5	3.2	1.5	10.3	10.3	3	2.1
Hs.106554	R15443	52992	0.13	0.54	4.3	0.9	10.1	2.9	3.2	10.1	1.7	1.8
Hs.142827	H80684	241432	3.34	13.95	4.2	9.8	1.1	3.6	2.2	9.8	0.8	0.7
Hs.27181	N30573	257197	1.01	4.61	4.6	9.8	2	2.8	3.5	9.8	2.2	2.5
Hs.77436	AA490267	823779	1.1	4.57	4.2	9.8	1.3	4.3	1.3	9.8	0.8	0.6
Hs.84131	AA630628	856167	19.32	88.72	4.6	3.7	2.2	9.7	2.8	9.7	0.9	1.8
Hs.83656	AA487634	841332	29.1	132.24	4.5	9.7	2.3	2.8	3.3	9.7	0.9	1.5
Hs.17466	W47454	324225	0.75	3.59	4.8	2.4	2.8	4.3	9.6	9.6	0.6	0.3
Hs.2271	H11003	47359	0.8	3.45	4.3	9.6	4.1	1.9	1.7	9.6	1.1	1.6

Table 1

Hs.219690	R45292	35626	8.39	44.17	5.3	2.8	1	9.6	7.8	9.6	0.3	0.7
Hs.81743	AA463248	797055	0.93	3.83	4.1	3.7	1.7	9.5	1.6	9.5	1.3	1.1
Hs.8687	AA463463	811785	0.27	1.55	5.8	9.5	2.6	3	8.2	9.5	1.2	1.5
Hs.188	AA453293	788136	0.56	2.27	4.1	9.4	1.8	3.6	1.5	9.4	1	0.6
Hs.195207	AA011215	359835	21.2	86.64	4.1	9.3	2.7	3.5	0.8	9.3	1.3	2.1
Hs.20799	H81331	239524	0.41	1.88	4.6	6.6	1.7	9.3	0.8	9.3	1.6	1.2
Hs.93847	AA456001	812098	0.49	2.11	4.3	9.2	2.1	2.3	3.7	9.2	0.9	2
Hs.78995	T99105	122288	0.58	3.04	5.2	7.9	1.1	9.2	2.7	9.2	1	1
Hs.84630	H21892	160192	0.63	2.5	4	9.2	0.8	2.9	3.1	9.2	1.2	1.7
Hs.181244	AA644657	853906	26.29	120.12	4.6	1.8	9.2	2.3	5	9.2	1.3	2.3
Hs.214469	W38391	302933	18.46	84.94	4.6	9.1	1.4	5.2	2.7	9.1	1.7	1.5
Hs.110248	AA011061	359610	0.65	2.78	4.3	0.7	6.3	1	9.1	9.1	1.4	1.1
Hs.10283	T57803	80643	1.9	7.2	3.8	9.1	1.1	3.5	1.5	9.1	0.7	1.1
Hs.44	AA001449	361974	2.84	11.38	4	5.2	0.3	9	1.5	9	0.6	0.7
Hs.125212	W93113	415043	0.66	2.37	3.6	9	1.2	3.1	1.2	9	1.1	0.5
Hs.1298	R98851	200814	0.51	1.96	3.9	1.3	9	1	4.1	9	1	0.8
Hs.29879	AA281744	712379	0.78	3.32	4.3	2	8.9	3.2	2.8	8.9	1.7	2.4
Hs.153954	H59725	207550	0.74	3.35	4.6	8.9	1.7	4.6	3	8.9	0.8	0.7
Hs.5260	N59534	248642	0.7	2.56	3.7	8.9	0.8	4.1	0.9	8.9	0.5	1.5
Hs.182982	AA099819	489798	0.76	2.99	3.9	1.4	8.9	1.5	3.8	8.9	2.3	1
Hs.23247	AA058597	380890	0.88	3.11	3.5	3.1	1.5	8.9	0.7	8.9	1.1	0.5
Hs.22964	AA463788	796496	6.27	25.24	4	1	2.8	3.5	8.9	8.9	1.2	2.6
Hs.98306	AA418808	767843	1.93	7.6	3.9	1.3	1.8	8.9	3.7	8.9	2.9	2.5
Hs.219540	AA504266	825418	0.13	0.57	4.5	5.5	1.1	8.8	2.5	8.8	0.5	1.2
Hs.75356	AA669136	854581	3.77	20.6	5.5	8.5	1.8	8.8	2.7	8.8	0.9	0.8
Hs.47047	N52073	282564	0.67	3.14	4.7	1.3	2.2	8.7	6.5	8.7	1	0.8
Hs.204062	N69204	292806	0.88	3.5	4	4	0.5	8.6	2.8	8.6	1.3	1.5
Hs.220408	AA256235	681891	0.45	1.79	4	2.2	1.3	3.9	8.6	8.6	1.3	0.9
Hs.33268	AA732917	399444	0.11	0.45	4.1	8.5	2.1	3.3	2.4	8.5	0.9	1.5
Hs.57301	R10662	128493	4.34	16.62	3.8	3.8	1.2	8.5	1.8	8.5	1.3	2.2
Hs.198890	AA505117	825785	0.12	0.55	4.7	2.4	8.4	5.5	2.6	8.4	2	0.8
Hs.47125	W74133	346308	1.18	4.97	4.2	4.1	1.7	8.4	2.8	8.4	0.9	1.3
Hs.71891	AA243828	668442	1.05	4.04	3.8	8.3	1.5	3.1	2.4	8.3	1	1.3
Hs.31248	N20480	264162	0.42	1.68	4	8.3	0.6	5.8	1.4	8.3	0.9	2.1
Hs.216911	H65595	209756	3.35	15.86	4.7	2.6	1.9	8.3	6.1	8.3	2	1.6

Table 1

Hs.204133	T77595	23185	16.06	66.4	4.1	8.3	1.5	4.9	1.9	8.3	2.4	2.3
Hs.5028	AA449490	785913	3.48	16.35	4.7	1.7	1.1	8.2	7.8	8.2	0.2	0.7
Hs.151899	AA234982	666829	1.97	7.02	3.6	8.2	1.5	3	1.6	8.2	0.9	1
Hs.158249	R85537	180179	0.13	0.58	4.5	1.5	8.2	2.8	5.5	8.2	0.4	2
Hs.103316	AA495904	768432	0.59	2.34	4	8.1	1.8	2.4	3.6	8.1	0.6	1.8
Hs.214417	AA456192	809495	5.99	21.5	3.6	2.1	1.1	8.1	3.1	8.1	0.8	1.3
Hs.171520	R56643	41302	0.83	3.61	4.3	8	2.7	4.7	2	8	1.1	1.1
Hs.7263(72)		277561	0.34	1.11	3.3	0.5	8	1	3.7	8	1.1	1.6
Hs.79411	R39861	26616	8.81	32	3.6	2.1	1	8	3.4	8	2.2	2.9
Hs.193063	AA449481	785910	5.38	23.41	4.4	2.4	0.9	8	6.1	8	0.1	0.5
Hs.6727	AA151214	504979	1	4.15	4.2	8	1.3	2.6	4.8	8	0.8	0.7
Hs.219690	AA452955	788541	7.56	35.66	4.7	2.4	1.4	7.9	7.1	7.9	1.2	1.4
Hs.212612	N54848	248371	1.28	5.55	4.3	6.8	0.8	7.9	1.8	7.9	2	1
Hs.10029	AA644088	845355	0.18	0.74	4.1	7.9	1.8	5	1.9	7.9	1.1	1.6
Hs.69285	AA099262	489535	0.6	2.23	3.7	7.7	1.4	3.9	1.9	7.7	1.9	1.2
Hs.219632	AA429307	773573	1.51	5.6	3.7	3.8	1.5	7.7	1.9	7.7	1.1	1.2
Hs.2934	AA633549	856489	0.25	0.97	3.9	2.4	1.7	7.7	3.9	7.7	1.6	2.2
Hs.4192	AA608730	950926	10.46	41.96	4	1.9	2.2	7.7	4.3	7.7	1.1	1.2
Hs.24950	AA668470	853809	13.68	50.14	3.7	2.6	0.8	7.6	3.7	7.6	1.2	1.7
Hs.24192	W52186	325375	0.72	2.89	4	7.6	1.1	4.6	2.8	7.6	0.7	0.8
Hs.24950	N42826	271038	1.05	3.78	3.6	3.5	0.3	7.6	2.9	7.6	0.8	0.4
Hs.7935	AA454989	811918	1.4	4.66	3.3	0.8	3	1.9	7.6	7.6	1.6	1
Hs.27695	AA598640	897865	3.99	16.67	4.2	2	0.9	6.2	7.5	7.5	1.8	1.6
Hs.99413	AA455878	812008	0.89	3.41	3.8	7.5	1.6	3.4	2.8	7.5	0.9	1.7
Hs.171495	AA419164	755663	1.97	7.52	3.8	4.8	1	7.5	1.9	7.5	0.9	0.8
Hs.85050	AA434558	773771	0.23	1.04	4.5	7.5	1.5	6.1	2.9	7.5	1.5	1.2
Hs.120051	AA707847	412967	0.7	2.84	4.1	2.7	1.4	7.5	4.7	7.5	0.6	1.5
Hs.75350	AA486728	841203	0.24	1.04	4.4	7.5	2.5	4.8	2.7	7.5	1	1.5
Hs.58210	AA733003	399075	0.56	2.27	4	2.7	1	7.4	5	7.4	2	1.6
Hs.11090	R95749	199185	0.96	3.71	3.9	7.4	1.5	4.1	2.4	7.4	0.7	0.7
Hs.3576	H93552	242706	2.67	9.96	3.7	2.8	1.2	7.4	3.5	7.4	1.4	1.5
Hs.120906	R33401	136169	1.07	3.88	3.6	7.4	2.9	3.2	1.1	7.4	0.6	0.4
Hs.8861	W72293	345032	3.89	13.33	3.4	7.4	2	3.5	0.9	7.4	0.6	0.5
Hs.218945	W52627	325641	5.75	18.12	3.1	0.4	4.1	0.8	7.3	7.3	1.7	1.2
Hs.215748	AA872057	1336262	11.06	45.2	4.1	2.1	7.3	1.7	5.3	7.3	0.6	2.9

Table 1

Hs.78771	AA599187	949939	134.49	402.87	3	7.2	0.9	3.2	0.7	7.2	1	1.7
Hs.113602	H23170	52422	0.1	0.29	2.9	0.9	7.2	0.6	3	7.2	0.9	0.8
Hs.31432	AA459368	814515	0.68	2.91	4.3	5.4	1.5	7.2	3	7.2	1	1.9
Hs.19301	H68403	212489	1.3	4.99	3.8	7.1	1.5	4.9	1.9	7.1	1.5	1.8
Hs.216894	AA001749	428223	13.35	56.47	4.2	5.9	1.5	7.1	2.5	7.1	1.2	1.6
Hs.44423	AA444066	756575	1.06	3.9	3.7	2.5	1.2	7.1	4	7.1	1.2	2.7
Hs.98285	AA418221	767761	0.68	2.55	3.7	1.9	1.5	7.1	4.4	7.1	2	1.8
Hs.2659	H56348	203732	3.6	12.73	3.5	7.1	1.8	3.6	1.7	7.1	0.6	0.4
Hs.218195	AA432030	782513	3.63	13.92	3.8	1.8	7.1	2.1	4.3	7.1	1.3	1.9
Hs.173381	AA487674	841620	1.83	7.84	4.3	7.1	1.3	7	1.8	7.1	0.7	0.6
Hs.198426	AA010158	430153	2.14	7	3.3	2	0.7	7.1	3.3	7.1	0.3	0.6
Hs.219210	AA436595	753092	1.63	6.18	3.8	2.7	1.6	7.1	3.8	7.1	1.4	1.8
Hs.201591	N54751	283268	0.83	2.65	3.2	3	1.7	7	1.1	7	0.8	0.8
Hs.8372	AA629862	884993	0.21	0.78	3.7	1.8	2.4	3.6	7	7	0.4	0.4
Hs.5010	H12105	48142	0.8	2.88	3.6	1.3	1.4	7	4.8	7	1.2	1.9
Hs.79078	AA481076	814701	2.33	9.69	4.2	4.6	2.5	7	2.5	7	1.9	2.3
Hs.78864	R68150	138369	2.85	9.13	3.2	7	1.6	3.2	1	7	0.7	0.6
Hs.205353	H13577	148021	1.13	4.41	3.9	7	1.7	5.6	1.5	7	0.9	1
Hs.214721	AA703460	450155	0.88	3.63	4.1	6.9	1.5	7	1.2	7	0.5	0.5
Hs.27695	AA463837	796539	3.79	13.47	3.6	2.1	0.9	4.3	6.9	6.9	2	1.3
Hs.192853	AA478866	753653	1.46	5.83	4	2.9	2.2	6.9	3.9	6.9	1.1	1.4
Hs.220354	AA476576	785368	2.04	8.1	4	3.9	2.4	6.9	2.7	6.9	3	1.9
Hs.218652	N40495	257999	0.99	3.19	3.2	1.7	1.1	6.9	3.2	6.9	0.9	1.6
Hs.205549	H61464	205527	2.82	8.43	3	3.1	0.5	6.8	1.7	6.8	0.4	0.6
Hs.215060	H04810	43642	1.13	4.59	4.1	6.8	1.3	6	2.2	6.8	0.4	1.5
Hs.83419	AA704524	451104	2.04	8.54	4.2	2.9	2	6.7	5.2	6.7	0.9	0.9
Hs.699	AA481464	756600	55.2	203.21	3.7	6.7	1.7	3.3	3	6.7	1.2	2.6
Hs.914	AA634028	868332	9.95	43.38	4.4	6.7	1.6	6.4	2.7	6.7	1.1	0.6
Hs.65403	AA490494	823902	2.29	8.54	3.7	1	5.4	1.9	6.7	6.7	1	1.3
Hs.169080	AA430172	781061	0.18	0.62	3.5	1.7	1.5	4.3	6.7	6.7	2	1.6
Hs.196349	AA458996	814251	0.89	3.04	3.4	6.6	1.1	4.7	1.3	6.6	1.3	0.6
Hs.74615	H23349	52096	2.34	7.57	3.2	6.6	0.8	3.4	2.1	6.6	0.3	0.4
Hs.170133	AA448277	782835	0.99	3.9	3.9	5.5	2.1	6.6	1.5	6.6	0.9	1.1
Hs.216009	AA417592	746072	2.74	10.88	4	6.6	1.5	5.1	2.7	6.6	1	1.4
Hs.138864	R93542	197831	0.76	2.56	3.4	2.9	0.8	6.6	3.3	6.6	0.9	1

Table 1

Hs.47913	W31088	310519	0.73	2.37	3.2	6.6	2.1	3.1	1.3	6.6	1	1
Hs.23756	AA233418	666159	1.5	5.9	3.9	6.5	2	4.3	2.8	6.5	0.9	0.6
Hs.169902	H58872	207358	3.68	12.37	3.4	2	6.5	3.5	1.5	6.5	2.3	2.8
Hs.12714	AA447729	813628	0.78	2.49	3.2	6.5	1.3	3	2	6.5	0.9	1.1
Hs.50735	H93216	241815	3.4	10.76	3.2	1.1	1.4	3.6	6.4	6.4	2.4	1.8
Hs.26285	AA428250	770984	1.66	4.84	2.9	6.4	1	3.1	1.1	6.4	0.8	1.5
Hs.22039	W21055	307337	0.26	1.01	3.9	6.4	1.5	5.8	1.9	6.4	1.2	0.9
Hs.153026	N23996	268700	1.68	6.22	3.7	6.4	2.4	5	1.1	6.4	0.9	1.4
Hs.1424	AI734238	309224	15.48	50.88	3.3	1.7	2	3.1	6.4	6.4	2.9	1.4
Hs.19222	AA181023	625011	4.34	16.87	3.9	1.4	2.7	5.1	6.4	6.4	1.5	1.7
Hs.27424	AA402879	741841	1.82	5.73	3.1	3.3	1.7	6.4	1.2	6.4	1.5	2.7
Hs.15984	H96654	251826	9.78	33.12	3.4	6.3	4.3	1.9	1	6.3	1.3	1.5
Hs.43910	AA598561	898198	8.41	31.57	3.8	6.3	1.3	4.9	2.6	6.3	0.9	0.8
Hs.167741	AA478585	753587	2.89	11.05	3.8	3.6	2.8	6.3	2.7	6.3	0.7	0.5
Hs.177486	AA633658	856575	1.32	4.4	3.3	1.5	2.5	3.1	6.3	6.3	1.4	1.2
Hs.2110	AA625995	745503	5.5	20.28	3.7	4.9	1.3	6.3	2.3	6.3	1.7	1.8
Hs.12372	AA453694	813661	0.64	2.13	3.3	6.3	0.9	3.6	2.5	6.3	1.7	1.4
Hs.171495	H09455	46180	2.25	8.04	3.6	5	1.1	6.2	2	6.2	0.7	0.9
Hs.75798	H99997	263342	11.73	44.52	3.8	4.5	2.4	6.2	2.1	6.2	2.1	1.9
Hs.169476	AA865469	1470060	109.25	355.85	3.3	6.2	1.1	3.8	2	6.2	1.6	1.4
Hs.90789	AA463454	811782	0.61	2.12	3.5	6.2	1.8	3.9	2	6.2	1.4	2
Hs.14763	H09392	45801	1.8	6.32	3.5	6.2	2.2	3.6	2.1	6.2	0.6	1.9
Hs.31086	W04674	320509	8.31	31.65	3.8	3.7	2.5	6.1	2.9	6.1	1.6	1.7
Hs.78885	R11888	25517	3.43	11.24	3.3	3.6	0.8	6.1	2.5	6.1	1	0.9
Hs.172401	AA418523	767310	1.68	6.65	4	2.9	2.2	6.1	4.6	6.1	1.7	1.9
Hs.16869	AA478481	786609	1.38	5.15	3.7	3.3	2.8	2.7	6.1	6.1	0.8	1
Hs.125522	N77006	246194	1.08	3.45	3.2	6.1	1.4	3	2.3	6.1	0.8	0.8
Hs.5857	AA465258	815017	13.21	53.9	4.1	6.1	2	5.4	2.9	6.1	1.2	1.7
Hs.220366	AA434454	770319	0.22	0.63	2.9	0.5	1.3	6	3.6	6	0.6	0.9
Hs.48604	N62684	292654	2.36	7.21	3.1	2.2	0.9	6	3.1	6	1.3	1.4
Hs.215748	AA044656	487773	2.5	8.88	3.6	1.7	6	2.3	4.3	6	0.6	2
Hs.219951	AA425465	773138	0.56	1.93	3.5	1.8	5.1	1	6	6	0.6	0.9
Hs.78980	W02702	327085	0.53	1.62	3	6	1.7	1.1	3.4	6	0.9	1.1
Hs.91747	AA043167	486110	2.82	10.79	3.8	5.9	1.2	2.3	5.9	5.9	0.8	1.7
Hs.14235	AA455013	811612	1.99	6.54	3.3	0.9	2.9	5.9	3.4	5.9	2.9	1.1

Table 1

Hs.2795	AA489611	897567	131.53	383.32	2.9	5.9	1.4	3.3	1.1	5.9	0.7	2.1
Hs.75887	T81140	109153	4.05	11.41	2.8	5.9	0.5	3.5	1.3	5.9	0.9	0.7
Hs.219446	AA137266	502819	10.06	29.81	3	1.3	1.6	5.9	3	5.9	1.1	2.1
Hs.107767	AA131299	503602	0.36	1.12	3.1	1.5	5.9	0.9	4.2	5.9	0.8	0.9
Hs.13472	AA122021	490414	0.55	1.91	3.5	3	1.3	5.9	3.9	5.9	1.4	2.8
Hs.14553	R07295	126858	0.81	2.89	3.6	5.9	2.3	3.6	2.5	5.9	1.6	1.4
Hs.53996	N47316	280528	2.65	8.37	3.2	1.3	1.9	3.6	5.8	5.8	0.7	1.7
Hs.14146	AA455382	812143	1.51	4.53	3	1.3	1	3.8	5.8	5.8	1.4	0.5
Hs.14606	AA418782	767823	3.59	10.84	3	1.1	1.9	5.8	3.3	5.8	2	1.2
Hs.146688	AA436290	754378	1.09	3	2.8	0.7	3.9	0.7	5.8	5.8	1.6	1
Hs.4263	N44490	271398	5.86	19.48	3.3	5.8	1.2	2.7	3.6	5.8	1	1
Hs.37045	W37305	322051	3.86	13.95	3.6	5.8	1.3	4.9	2.4	5.8	1.5	1.3
Hs.118684	R24974	35191	12.57	39.4	3.1	5.8	1.2	2.4	3.1	5.8	1	1.6
Hs.21586	R14275	28444	1.49	5.02	3.4	1.2	1.5	5.8	5	5.8	2.1	2
Hs.215964	AA885433	1466844	0.48	1.6	3.4	1.6	1.1	5.8	5	5.8	1.7	1.7
Hs.75968	AA634103	868368	101.49	343.11	3.4	1.7	3.1	2.9	5.8	5.8	2.1	1.5
Hs.154967	W16596	301867	0.19	0.6	3.2	1.4	5.8	3.6	1.9	5.8	1.2	2
Hs.125043	W86391	415891	1.15	3.37	2.9	1.8	1	3.2	5.8	5.8	2.4	1.8
Hs.75798	N74340	298716	10.15	37.25	3.7	5.7	2.1	4.5	2.4	5.7	1.8	1.7
Hs.217735	AA465546	815069	0.69	2.25	3.3	2.9	1	5.7	3.3	5.7	1	1.2
Hs.106730	N57993	247331	0.16	0.49	3.1	2.6	1.1	3	5.7	5.7	1.6	1.5
Hs.139572	AA496792	897641	0.43	1.42	3.3	5.7	1.3	5.5	0.8	5.7	1	1.5
Hs.101565	AA411556	754494	2.02	7.08	3.5	2	2.9	5.7	3.4	5.7	1	2.2
Hs.219045	AA134036	503851	11.07	41.68	3.8	5.7	1.2	5.5	2.7	5.7	0.4	0.6
Hs.21509	AA447486	784282	2.03	5.93	2.9	1.9	0.8	3.3	5.7	5.7	0.7	0.7
Hs.153546	R12825	26462	7.65	25.68	3.4	3.4	1.6	5.7	2.7	5.7	1.1	1.9
Hs.151604	AA127116	511586	121.29	421.17	3.5	5.7	2.4	4.1	1.7	5.7	1.4	2.2
Hs.102267	W70343	345849	0.53	1.67	3.1	5.7	1.5	3.4	2	5.7	1.4	1.2
Hs.574	AA699427	433253	1.05	3.36	3.2	5.7	1.3	0.7	5.2	5.7	1.7	1.8
Hs.183434	AA489232	825076	9.21	29.58	3.2	5.7	1.1	2.9	3.2	5.7	1.1	1.3
Hs.184591	AA131673	503889	2.2	7.03	3.2	5.6	1.6	4.2	1.4	5.6	1.3	2.8
Hs.181366	W88967	417711	3.33	10.91	3.3	3.4	2.6	5.6	1.6	5.6	1.8	0.3
Hs.6900	R41965	31837	6.53	23.32	3.6	4.6	1.5	5.6	2.6	5.6	1.9	2
Hs.114362	N26171	269425	0.6	2.08	3.5	5.6	2.3	4.2	1.9	5.6	1.2	0.9
Hs.92260	W42556	323074	0.97	3.37	3.5	2.2	2.1	5.6	4.1	5.6	1.1	0.8

Table 1

Hs.194329	N73975	296616	4.61	13.9	3	5.5	1.2	2.3	3	5.5	1.5	1.9
Hs.15192	R94542	197727	0.1	0.34	3.3	2	3.5	5.5	2.3	5.5	0	0.8
Hs.147916	AA626845	745188	7.03	21.04	3	3.1	1.3	5.5	2	5.5	1	1.3
Hs.201967	R93124	196992	10.01	37.22	3.7	2.1	1.9	5.4	5.5	5.5	3	2.4
Hs.203309	R43471	32283	0.9	30.99	3.5	4.5	1.7	5.5	2.3	5.5	1.1	2.6
Hs.1042	N45131	282956	0.34	1.26	3.7	5.5	2.9	3	3.3	5.5	0.8	1.4
Hs.116022	AA455706	813999	2.01	6.86	3.4	5.5	1.4	2.2	4.5	5.5	1.4	2.4
Hs.26037	H19359	51391	1.4	4.04	2.9	1.5	1.3	5.5	3.3	5.5	0.8	1.1
Hs.16886	AA417803	752688	1.03	3.22	3.1	1.5	1.4	4.1	5.5	5.5	1.4	1.7
Hs.186559	H96712	251612	0.92	2.42	2.6	5.4	1.1	3.1	0.9	5.4	1.8	2.5
Hs.5900	AA028164	364840	2.07	6.93	3.3	3.7	1.5	5.4	2.8	5.4	1.2	1.6
Hs.218195	AA432030	782513	4.04	13.11	3.2	1.7	5.4	2.1	3.7	5.4	1	1.6
Hs.215109	N49079	279752	1.83	6.48	3.5	3.9	2	5.4	2.9	5.4	2.8	1.8
Hs.168163	H93424	220700	1.7	5.51	3.2	1.8	1.3	5.4	4.5	5.4	1.2	1.8
Hs.173159	AA598796	898098	6.82	22.54	3.3	4.3	1.2	5.4	2.4	5.4	1.6	1.5
Hs.167510	N94262	293651	7.01	23.21	3.3	2.6	1.5	5.4	3.7	5.4	2	1.9
Hs.81086	AA460012	795603	4.68	13.83	3	5.4	3.8	1.7	0.9	5.4	1.1	1.2
Hs.24529	R06653	126447	0.58	1.97	3.4	2.9	1.7	5.4	3.7	5.4	1.7	2.6
Hs.4980	H73914	214858	1.04	3.3	3.2	5.3	1.3	3.9	2.2	5.3	1.2	1.2
Hs.169082	N36745	269029	0.77	2.27	3	5.3	1.5	3.3	1.8	5.3	1.3	0.9
Hs.6586	AA504590	825372	7.42	23.82	3.2	5.3	1.1	3.6	2.7	5.3	1.5	1.8
Hs.76127	W39443	322553	14.15	48.81	3.4	5.3	2.5	3.5	2.5	5.3	0.9	1.4
Hs.116368	AA057426	381023	0.27	0.85	3.1	3.9	1.2	5.3	2.1	5.3	1.5	0.4
Hs.42315	H96392	256680	0.96	2.94	3.1	1.9	1.4	5.3	3.6	5.3	2.2	1.3
Hs.23756	W78156	346861	2.46	8.95	3.6	5.3	2.6	4.6	2	5.3	0.8	0.5
Hs.218516	N64374	290199	2.61	9.17	3.5	5.3	1.3	2.3	5.2	5.3	0.7	0.7
Hs.198119	R86721	165857	0.51	1.8	3.5	1.7	2.9	5.3	4.3	5.3	0.8	1.6
Hs.82380	AA481759	810791	3.14	11.35	3.6	4.4	5.3	2.7	2	5.3	1.8	1.9
Hs.42322	H99415	262695	1	3.8	3.8	5.3	2.4	4.7	2.9	5.3	1	0.8
Hs.218433	AA449038	785795	2.02	7.83	3.9	2.8	2.6	5.3	4.8	5.3	1.1	1.7
Hs.177664	AA024932	364992	0.55	1.76	3.2	2.9	1.4	5.3	3.2	5.3	1.7	1.3
Hs.106019	AA082348	366105	0.22	0.74	3.4	2.7	1.3	4.5	5.3	5.3	0.8	0.6
Hs.13845	AA521247	827152	0.73	2.31	3.2	5.3	1	4.5	2	5.3	1.6	1.8
Hs.15787	N49138	279810	3.77	13.12	3.5	5	0.9	5.3	2.7	5.3	0.7	1.5
Hs.74711	W37375	322067	2.78	10.28	3.7	5.3	2	4.7	2.8	5.3	1.9	3

Table 1

Hs.157174	AA427792	773373	1.69	5.44	3.2	2.4	0.7	5.3	4.5	5.3	1.3	0.9
Hs.154993	AA142842	504372	2.66	10.34	3.9	2.4	5.2	2.7	5.3	5.3	1.6	1.9
Hs.31968	AA126259	502767	0.26	0.87	3.4	2.4	1.7	5.3	4.3	5.3	1.2	1.7
Hs.214688	N27118	269748	4.41	13.65	3.1	5.3	1.3	3	2.8	5.3	0.8	1.9
Hs.9280	AA862434	1456118	2.8	9.08	3.2	1.8	5.2	3.6	2.3	5.2	1.7	2.3
Hs.103288	AA149640	504300	0.4	1.19	3	5.2	1.8	3.6	1.2	5.2	1.5	1.4
Hs.181327	AA398458	725533	1.49	5.07	3.4	2.8	2.1	3.4	5.2	5.2	2.4	1.8
Hs.107767	H98215	261194	1.63	4.92	3	1.6	3.8	1.4	5.2	5.2	0.9	0.9
Hs.352	W47361	324715	0.66	1.86	2.8	5.2	1.5	3.7	0.8	5.2	0.7	0.4
Hs.218373	W76320	345034	2.21	5.14	2.3	5.2	0.2	3.6	0.3	5.2	0.6	0.7
Hs.82837	H94897	230271	2.18	5.87	2.7	5.2	1	3.1	1.5	5.2	1.3	1.7
Hs.220126	W21081	307532	3.6	12.12	3.4	5.2	1.4	4.2	2.6	5.2	1.5	1.1
Hs.18919	W86360	415907	1.46	4.46	3.1	5.2	1.2	3.7	2.2	5.2	1.2	2.8
Hs.84	N75745	244355	1.22	3.86	3.2	3.6	1.4	2.5	5.2	5.2	0.7	0.4
Hs.169980	R74004	143287	6.66	16.37	2.5	0.4	3.3	1	5.2	5.2	2	1.2
Hs.92186	R66633	141192	2.4	9	3.7	5.2	2.3	4.5	3	5.2	1.8	1.5
Hs.2025	AA040617	486208	0.87	2.83	3.3	5.2	1.7	2.9	3.2	5.2	2.1	2.4
Hs.7541	AA676998	454083	0.1	0.26	2.5	5.2	0.9	3.2	0.7	5.2	1.4	2.9
Hs.154210	R13546	26418	0.38	1.12	2.9	5.2	1.7	3.6	1.4	5.2	0.7	1.5
Hs.21894	AA047499	488431	0.22	0.63	2.9	3.4	1.4	5.1	1.6	5.1	2.1	1
Hs.270	AA490903	824531	1.41	3.89	2.8	5.1	1.9	3.2	0.8	5.1	0.9	1
Hs.34359	AA453942	788217	0.22	0.58	2.7	0.7	1.6	5.1	3.3	5.1	1	0.8
Hs.26799	AA460732	796767	0.84	2.41	2.9	5.1	0.7	3.8	1.8	5.1	0.8	0.7
Hs.220038	AA459491	814478	1.38	4.05	2.9	5.1	3.9	1.7	1	5.1	0.8	1.1
Hs.215857	N62157	287646	5.02	14.98	3	3.4	1.2	5.1	2.2	5.1	0.6	1.1
Hs.28783	AA394303	726599	1.34	4.26	3.2	1.8	2.3	3.5	5.1	5.1	0.7	1.9
Hs.114311	AA700904	453107	3.02	8.94	3	1.8	1.3	5.1	3.6	5.1	1.8	2
Hs.215783	AA449688	785766	1.28	4.54	3.5	2.3	1.9	5.1	4.9	5.1	1.6	1.2
Hs.215572	AA488721	841703	3.89	11.73	3	3.4	1.1	5.1	2.5	5.1	1.2	1.2
Hs.135141	AA424680	767181	0.9	2.7	3	5.1	0.9	3.5	2.5	5.1	0.9	1.1
Hs.41716	W46667	324122	0.79	2.4	3	5.1	1.8	4.2	1	5.1	1.1	0.8
Hs.176016(85)		273602	0.11	0.34	3	2.7	1.1	5.1	3.2	5.1	1.3	1.2
Hs.215375	W79647	346321	0.12	0.34	2.9	5.1	0.6	4.4	1.3	5.1	1.7	2.6
Hs.219583	W47184	324703	0.54	1.45	2.7	1.5	0.7	5.1	3.4	5.1	1.3	1
Hs.177533	AA464062	810272	1.09	3.85	3.5	2.4	2.6	5.1	4.1	5.1	1.7	1.1

Table 1

Hs.81849	AA010608	430318	2.62	8.16	3.1	5.1	1.2	4	2.2	5.1	1.2	0.9
Hs.103092	W52248	325513	10.71	28.07	2.6	1	3.1	1.3	5.1	5.1	1.7	2.4
Hs.100623	AA775290	878631	1.02	3.28	3.2	3.2	2.7	1.9	5.1	5.1	0.4	0.7
Hs.167115	N43976	272576	10.95	30.5	2.8	5	0.4	3.6	2	5	0.5	0.5
Hs.15220	AA488885	824875	5.64	16.12	2.9	2.1	1.1	5	3.2	5	0.1	1.2
Hs.792	AA706974	431376	0.11	0.31	2.9	0.7	5	4.8	1.1	5	0.9	0.5
Hs.212371	R56043	40672	8.95	27.62	3.1	3.3	1.7	5	2.3	5	0.6	1.9
Hs.214414	AA456455	809507	0.11	0.3	2.8	5	1.4	4.2	0.8	5	0.8	2.4
Hs.178215	AA757170	1309620	0.21	0.65	3.1	5	1.9	3.1	2.3	5	1.4	1.3
Hs.55964	AA418644	767365	1.98	5.99	3	5	3.9	1.3	1.9	5	1.2	2
Hs.5884	N67822	291623	0.37	1.08	2.9	3.3	1	5	2.5	5	1.3	0.7
Hs.77860	AA599311	1091543	11.73	34.86	3	1.7	1.6	5	3.6	5	1.2	1.2
Hs.77666	AA598887	897997	4.25	12.25	2.9	2.2	1.1	5	3.3	5	1.3	1.3
Hs.199136	AA476272	770670	0.94	3.1	3.3	5	4.5	2.3	1.5	5	1.3	1.7
Hs.19718	AA644448	744800	0.34	1.09	3.2	1.3	3.9	2.8	4.9	4.9	1.9	2.7
Hs.78950	AA477297	740801	5.79	19.54	3.4	4.8	1	4.9	2.8	4.9	0.8	2
Hs.82590	R23738	131621	2.83	9.34	3.3	4.9	1.3	2.8	4.2	4.9	0.8	2.4
Hs.172785	R25398	133180	3.46	11.72	3.4	2.4	1.8	4.9	4.4	4.9	1	0.8
Hs.216113	AA479351	753907	1.85	6.13	3.3	4.9	2.3	4	2	4.9	0.6	0.7
Hs.79353	N73611	296095	0.76	2.49	3.3	2.7	1.2	4.9	4.4	4.9	1.4	1.5
Hs.101082	R48303	153505	2.44	7.1	2.9	4.9	1.4	3.5	1.9	4.9	0.7	2.9
Hs.106614	AA401437	743195	1.17	3.68	3.1	2.2	1.6	4.9	3.8	4.9	1.2	1.8
Hs.22939	AA455163	813304	3.79	12.16	3.2	2.9	1.2	4.9	3.8	4.9	1	1.3
Hs.16411	AA452963	788556	3.92	11.68	3	2.5	1.4	3.1	4.9	4.9	1.6	2
Hs.94722	H19667	172721	1.05	3.22	3.1	4.9	1.4	2.7	3.3	4.9	1	1
Hs.166017	N99168	278570	0.23	0.69	3	2.8	0.6	4.9	3.9	4.9	0.6	1.3
Hs.219739	AA417595	746080	0.68	2.27	3.3	4.8	3.5	2.4	2.6	4.8	0.9	1
Hs.216917	AA416552	730970	1.91	5.79	3	3.6	2.3	1.5	4.8	4.8	1.4	2.8
Hs.9512	AA424653	767164	7.24	20.41	2.8	1.8	1.1	4.8	3.5	4.8	1.3	2.1
Hs.50735	AA425160	769004	6.26	16.21	2.6	1.1	1	3.4	4.8	4.8	1.2	0.8
Hs.27261	H09343	45912	2.2	6.83	3.1	4.8	2	3.1	2.5	4.8	1.3	1.4
Hs.59290	W90529	418206	0.63	1.79	2.9	4.8	1	3.8	1.8	4.8	1.8	2.5
Hs.189057	AA788738	1240347	0.61	1.72	2.8	4.7	0.7	4.8	1.1	4.8	0	1.2
Hs.4273	AA421030	730385	1.96	6.17	3.1	2	1	4.8	4.7	4.8	1.3	1.5
Hs.76781	AA234671	687397	20.23	57.94	2.9	4.8	0.9	3.5	2.2	4.8	0.7	1.3

Table 1

Hs.183381	R25652	132878	0.82	2.66	3.3	1.7	2.8	3.7	4.8	4.8	2.4	1.4
Hs.125856	AA705237	461522	2.12	6.86	3.2	4.3	1.3	4.8	2.5	4.8	1.1	2.7
Hs.196938	AA187971	624754	0.1	0.3	3	2.1	4.4	4.8	0.8	4.8	0.7	1.8
Hs.105636	AA479276	754255	5.22	13.39	2.6	1.3	1.1	4.8	3.1	4.8	0.4	0.5
Hs.15203	AA479566	740617	2.75	8.71	3.2	4.8	1.7	3.8	2.5	4.8	1.4	1.9
Hs.117872	H74086	214809	1.44	3.99	2.8	4.8	1	3.5	1.9	4.8	0.8	1.5
Hs.7114	AA476604	785391	5.79	17.06	2.9	3.4	1	4.7	2.7	4.7	1.2	1.4
Hs.84521	N21407	265592	0.33	0.91	2.8	4.7	1.1	3.4	1.9	4.7	1.4	1.9
Hs.154672	AA480994	814615	3.05	10.68	3.5	4	2.8	4.7	2.4	4.7	1.6	2.4
Hs.193719	AA150298	491478	0.33	1.02	3.1	2.9	1	4.7	3.7	4.7	0.9	1.4
Hs.90011	AA431817	782406	3.82	11.42	3	1.4	1.9	4	4.7	4.7	1.2	1.3
Hs.219501	AA187933	626001	4.99	14.58	2.9	4.7	1.3	3.6	2.1	4.7	0.6	0.5
Hs.16755	W55967	340555	3.88	11.63	3	4.7	2.3	3.3	1.6	4.7	1.3	1.7
Hs.20938	AA708161	460806	2.72	7.56	2.8	4.7	3.1	1.4	1.9	4.7	0.8	1.2
Hs.42927	N20989	265853	0.26	0.83	3.2	4.7	2	2.9	3.2	4.7	1.5	1.4
Hs.60177	AA447525	782581	0.42	1.28	3.1	4.7	2.6	3.5	1.6	4.7	1.4	2
Hs.55999	AA442287	757435	1.28	3.95	3.1	3.9	1.2	2.6	4.7	4.7	0.9	2
Hs.28166	AA490805	824132	1.92	5.6	2.9	4.7	0.6	3.6	2.8	4.7	1.8	2.2
Hs.50252	AA599068	950422	3.06	9.17	3	1.8	2.2	4.7	3.3	4.7	0.7	1
Hs.218436	AA495898	768347	9.05	26.56	2.9	2.9	0.7	4.7	3.4	4.7	1.3	1.1
Hs.28773	AA426065	757234	0.4	1.29	3.2	1.9	2.8	3.6	4.7	4.7	1.1	1.3
Hs.173103	N57526	279920	1.28	2.99	2.3	0.5	4.6	0.6	3.6	4.6	0.7	0.7
Hs.48119	AA454227	795525	0.8	2.43	3.1	2.6	1.1	4.6	3.9	4.6	1.4	1.5
Hs.220302	R27457	133454	3.05	9	3	3.9	2	4.6	1.3	4.6	0.4	1.2
Hs.216074	AA864226	1470365	0.83	2.68	3.2	2.7	1.3	4.6	4.3	4.6	0.9	2
Hs.8123	AA132330	566887	2.54	8.65	3.4	2.8	2.4	4.6	3.9	4.6	1	1.4
Hs.155986	H93249	241880	5.12	14.05	2.7	4.6	1	3.4	2	4.6	0.8	1.1
Hs.82712	N62761	289551	4.4	12.67	2.9	4.6	1.3	3.3	2.3	4.6	0.6	0.4
Hs.203869	AA449429	785572	2.9	8.56	2.9	2.1	1.2	4.6	3.9	4.6	0.8	1.7
Hs.75361	AA700048	435024	0.25	0.7	2.8	2.9	0.7	4.6	3.2	4.6	1.5	1.6
Hs.167660	H99362	262262	0.3	0.81	2.7	2.2	0.4	4.6	3.5	4.6	1.6	1.5
Hs.19054	N45441	244062	1.05	3.04	2.9	0.9	4.6	2.7	3.4	4.6	0.9	1.1
Hs.9075	AA453839	813689	4.38	13.51	3.1	1.6	4	2.2	4.5	4.5	2.3	1.7
Hs.50699	N76097	299404	0.92	2.68	2.9	4	1.5	4.5	1.6	4.5	2.5	2.9
Hs.42873	AA758429	396272	7.82	23.77	3	2.2	1.2	4.5	4.2	4.5	1.3	2.6

Table 1

Hs.82771	AA490617	824117	0.95	2.97	3.1	2.5	1.5	4	4.5	4.5	0.8	2.2
Hs.215103	AA099515	510679	0.14	0.44	3.2	4.1	1.9	4.5	2.3	4.5	2.9	2.6
Hs.21291	AA461120	796248	5.09	15.73	3.1	4.5	1.6	2.7	3.6	4.5	0.7	2.1
Hs.79305	AA481718	756627	5.63	15.69	2.8	3	0.8	4.5	2.8	4.5	0.7	1.2
Hs.63984	R17717	31093	4.91	14.26	2.9	4.5	0.2	2.5	4.4	4.5	0.7	0.4
Hs.55158	W37689	322123	1.91	5.88	3.1	4.5	1.8	3.7	2.2	4.5	1.4	1.3
Hs.75471	AA504351	825478	3.13	9.97	3.2	2.4	2.1	4.5	3.7	4.5	1	1.6
Hs.19954	AA505162	825718	2.73	7.72	2.8	2.6	0.9	3.4	4.5	4.5	1.7	2.5
Hs.76053	H27646	162775	42.02	125.61	3	4.2	0.7	4.5	2.6	4.5	0.5	1.1
Hs.10645	AA444071	756599	0.16	0.43	2.8	3.8	0.7	4.5	2.2	4.5	0	2.1
Hs.219456	AA419614	746152	14.83	43.45	2.9	3.9	2	4.5	1.4	4.5	0.9	2.5
Hs.88707	AA278401	712525	1.39	4.24	3.1	4.5	1.3	3.8	2.7	4.5	1.4	2
Hs.82359	AA293570	714213	4.36	12.7	2.9	2.4	1.1	4.5	3.7	4.5	0.7	0.7
Hs.172009	AA116060	531862	18.17	58.91	3.2	2.2	2.8	3.6	4.5	4.5	1.5	2.4
Hs.30822	AA406363	753213	1.96	6.05	3.1	4.2	1.6	4.4	2	4.4	0.8	0.9
Hs.173534	H4088C	175950	0.14	0.35	2.5	4.4	0.8	3.3	1.5	4.4	0.4	0.8
Hs.220286	AA455150	809902	0.36	1.04	2.9	1.9	2.2	4.4	3.2	4.4	0.5	1.4
Hs.24641	AA504389	825228	1.38	4.19	3	2	2.1	3.6	4.4	4.4	2	1.2
Hs.75770	AA045192	487777	0.91	2.93	3.2	2.6	1.8	4.4	4	4.4	1.8	1.7
Hs.50661	N75947	295206	1.69	4.04	2.4	4.4	0.9	3.1	1.2	4.4	1	2
Hs.75527	AA456400	813280	3.57	9.88	2.8	4.4	1	3.3	2.4	4.4	1.4	1.2
Hs.197341	AA679177	866694	1.46	4.48	3.1	2.3	2	4.4	3.6	4.4	1.4	1.3
Hs.75416	R45111	34795	13.96	44.69	3.2	4.4	1.2	4.3	3	4.4	1.4	1.2
Hs.26057	AA456289	813154	10.72	25.66	2.4	0.6	0.7	3.9	4.4	4.4	0.7	0.9
Hs.47546	N52810	283453	2.02	5.91	2.9	3	2	4.4	2.3	4.4	1.7	1.4
Hs.75975	R17642	32257	79.14	234.42	3	3.5	1.4	4.4	2.6	4.4	1.3	1.9
Hs.218811	N89861	305538	8.08	22.57	2.8	3.1	2.8	4.4	0.9	4.4	1.6	2.8
Hs.212886	AA436325	754413	0.47	1.43	3	2.6	1	4.1	4.4	4.4	0.8	1.
Hs.155572	AA012939	360240	2.13	5.55	2.6	1.9	1	4.4	3.2	4.4	0.6	0.5
Hs.79008	H17512	50614	12.63	42.06	3.3	4.4	2.7	3.7	2.6	4.4	1.4	2.3
Hs.189509	AA683085	970591	98.58	295.99	3	2.3	2.1	3.2	4.4	4.4	1.7	1.7
Hs.67619	AA447018	784258	5.04	13.78	2.7	3.1	0.8	4.3	2.7	4.3	0.7	1.4
Hs.10198	AA701978	435957	0.5	1.49	3	3.4	1.7	4.3	2.6	4.3	1.6	0.9
Hs.210526	N70948	294397	0.56	1.29	2.3	1.6	0.3	4.3	3.1	4.3	0.9	0.6
Hs.7351	AA046622	487444	2.47	7.65	3.1	4.3	2.6	3.6	1.8	4.3	1	1.6

Table 1

Hs.21704	N23578	261836	1.25	3.85	3.1	4.3	1.5	3.8	2.6	4.3	0.7	0.5
Hs.248	W56189	340630	6.91	18.92	2.7	4.3	1.3	3.3	2	4.3	0.9	1.2
Hs.218157	H72917	214131	0.96	2.49	2.6	1.4	1.1	4.3	3.5	4.3	1.1	1.6
Hs.1722	AA936768	1486083	0.55	1.4	2.5	4.3	3.6	1.9	0.4	4.3	0.2	0.5
Hs.80919	AA427447	770444	12.9	33.33	2.6	2.5	0.4	4.3	3.1	4.3	0.6	1.5
Hs.216671	W80739	415613	0.85	2.53	3	3.6	2.1	1.9	4.3	4.3	1	1
Hs.198008	W42512	323028	0.77	1.91	2.5	0.9	4.3	1.1	3.7	4.3	0.5	1.9
Hs.78504	AA857716	1435300	4.63	14.27	3.1	2.3	1.8	4	4.3	4.3	1.3	2.2
Hs.219667	R14981	35503	1.24	3.88	3.1	4.3	1.5	4.2	2.6	4.3	0.6	1.2
Hs.125220	AA018449	362402	0.1	0.26	2.6	3.8	1.1	4.3	1.4	4.3	0.9	0.5
Hs.188882	W90353	418192	1.93	4.96	2.6	1.9	1.1	4.3	3	4.3	0.6	0.8
Hs.181366	AA486460	811139	7.8	25.1	3.2	2.7	2	4	4.3	4.3	1.3	0.5
Hs.86178	N28754	266855	0.63	1.73	2.8	1.9	0.8	4	4.2	4.2	1.5	1.7
		269663	0.56	1.48	2.6	1.6	1.5	4.2	3.3	4.2	1	0.7
Hs.22370	AA504707	825582	0.95	2.64	2.8	2.1	1	4.2	3.8	4.2	0.2	1
Hs.22515	H10100	46829	1.73	5.72	3.3	2.1	2.9	4	4.2	4.2	2.1	1
Hs.204298	AA150416	491403	0.55	1.67	3	4.2	2.3	3.2	2.5	4.2	0.9	1.5
Hs.208067	AA205625	646753	0.65	1.67	2.6	3.5	0.3	2.2	4.2	4.2	0.2	0
Hs.105661	AI732783	810993	0.3	0.85	2.8	1.9	4.2	1.7	3.4	4.2	1.2	0.9
Hs.193989	W88884	417855	3.88	11.94	3.1	2.6	2.4	4.2	3	4.2	1	1.5
Hs.173001	AA465374	814114	5.53	16	2.9	1.9	2.3	4.2	3.1	4.2	2.1	1.8
Hs.167678	N32909	259896	0.29	0.69	2.4	1.2	0.5	3.6	4.2	4.2	1	0.8
Hs.22604	R44077	33611	1.45	4.32	3	2.8	1.3	4.2	3.7	4.2	0.5	1.4
Hs.108815	AA464210	810326	5.39	14.05	2.6	1.2	4.2	1.8	3.3	4.2	1.2	2.1
Hs.219274	AA155787	590253	3.51	9.77	2.8	4.2	1.4	3.2	2.3	4.2	1	1
Hs.18249	T98182	121770	1.04	2.92	2.8	4.2	1.2	3.6	2.3	4.2	1	0.5
Hs.169300	N45138	282978	0.28	0.94	3.3	2.9	4.2	2.2	3.9	4.2	0.6	0.7
Hs.45002	N54221	281978	0.19	0.59	3	2.8	1.7	3.4	4.2	4.2	1.2	2.1
Hs.181366	AA664195	855547	3.83	11.9	3.1	3.3	2.1	4.2	2.8	4.2	1.5	0.2
Hs.72805	W05834	299815	8.38	22.1	2.6	3.3	1.2	4.2	1.9	4.2	0.6	0.9
Hs.24957	AA866113	1470333	0.3	0.86	2.9	4.1	1.7	3.3	2.3	4.1	0.7	1.6
Hs.97996	AA459621	810951	1.23	3.4	2.8	3.2	1	4.1	2.7	4.1	0.9	1.9
Hs.172623	R19314	32996	3.92	11.67	3	4.1	1.1	4.1	2.6	4.1	1.8	1.1
Hs.198008	W72201	345935	0.6	1.48	2.5	0.7	4	1.1	4.1	4.1	0.9	2.4
Hs.88051	R06566	126406	2.86	8.65	3	2.3	1.6	4.1	4	4.1	1.9	1.3

Table 1

Hs.82575	AA521249	827156	7.03	19.42	2.8	4.1	1.8	3	2.1	4.1	0.7	1.1
Hs.58169	W72679	345787	0.81	2.49	3.1	2.1	2.5	4.1	3.6	4.1	2.7	2.3
Hs.109643	AA598533	897813	6.64	20.95	3.2	2.8	2	3.7	4.1	4.1	0.7	0.9
Hs.8180	AA456109	813533	5.77	17	2.9	4.1	1.5	4.1	2.1	4.1	0.8	0.8
Hs.206457	W24833	327228	1.6	4.26	2.7	2.2	0.6	4.1	3.8	4.1	0.7	0.6
Hs.202577	AA056060	380883	1.24	3.31	2.7	2.6	0.8	4.1	3	4.1	0.9	0.9
Hs.214465	AA664067	855799	13.73	35.69	2.6	3.1	0.7	4.1	2.5	4.1	0.9	1.1
Hs.88764	AA418900	768050	3.36	9.97	3	2.4	1.6	4.1	3.8	4.1	1.2	1.5
Hs.182793	AA458516	811582	0.84	2.46	2.9	1.9	4.1	2	3.7	4.1	1.7	1.4
Hs.28511	AA417912	767408	1.67	3.81	2.3	1.1	0.9	3	4.1	4.1	0.8	1.1
Hs.9899	AA037809	375857	0.6	1.64	2.8	4.1	1.8	3.1	2.1	4.1	1.3	1.6
Hs.207292	AA486195	842769	2.58	6.85	2.7	2.1	1.4	4.1	3	4.1	1.7	1.4
Hs.60088	AA279097	703994	0.16	0.43	2.8	4.1	1.8	3.4	1.8	4.1	0.5	1.9
Hs.58879	W86523	416769	0.62	1.69	2.7	4.1	3.1	2	1.7	4.1	0.9	2.3
Hs.23038	AA460847	796281	22.29	70.05	3.1	4	1.9	4.1	2.6	4.1	1.5	2.5
Hs.194705	AA453982	795185	0.68	1.82	2.7	1.8	1.7	3.3	4.1	4.1	1	1.5
Hs.173145	AA479284	754280	4.48	10.46	2.3	1.6	0.7	4	3.1	4	0.3	1.1
Hs.13500	AA132195	504225	0.73	1.98	2.7	4	0.9	3	2.9	4	1.1	1.2
Hs.131818	N91797	307174	1.01	2.63	2.6	1.9	1.3	4	3.1	4	1.9	0.7
Hs.203914	AA477165	740554	3.27	8.39	2.6	4	0.8	3.5	2	4	0.5	0.9
Hs.172849	AA143726	591994	0.12	0.31	2.5	1	3.1	4	1.8	4	0.5	1.3
Hs.63382	AA490388	823811	0.48	1.47	3.1	3.6	2.2	2.6	4	4	0.9	1.4
Hs.174038	AA405587	772470	4.64	13.33	2.9	2.5	1.3	4	3.7	4	1	2.5
Hs.14920	AA258104	686733	1.03	2.84	2.7	2.1	3	1.9	4	4	1.8	2.4
Hs.214132	N91887	306771	0.71	1.68	2.3	4	1	3.4	1	4	1.2	1.2
Hs.173637(85)		626385	9.64	24.06	2.5	4	0.9	3.3	1.8	4	0.8	1.1
Hs.220198	W04928	298603	0.38	1.02	2.7	4	2	3.2	1.7	4	0.7	0.8
Hs.69771	AA401441	741977	1.67	4.77	2.8	1.7	4	2	3.7	4	1.5	1.3
Hs.99402	AA456023	812145	1.42	3.99	2.8	2.2	1.5	4	3.5	4	0.8	1.1
Hs.25951	N94209	293745	1.72	3.9	2.3	1.2	3.3	4	0.6	4	1.3	1.4
Hs.59368	W92775	418356	1.05	2.64	2.5	3.4	0.9	4	1.7	4	1.1	0.6
Hs.85087	AA156632	491460	1.05	2.53	2.4	4	1.3	3.2	1.1	4	1.2	0.8
Hs.58589	H04891	43733	0.29	0.66	2.2	4	1.1	0.6	3.3	4	0.7	1.2
Hs.216197	N47922	260181	5.02	13.68	2.7	1.9	1.3	4	3.7	4	1.1	1.2
Hs.191625	N39280	268711	2.42	6.95	2.9	2.1	1.9	4	3.5	4	1.6	1.5

Table 1

Hs.126701	H41165	192242	82.27	210.37	2.6	1.1	2	3.2	4	4	2.9	1.2
Hs.49763	AA011685	429729	0.88	2.51	2.9	4	2.5	3.2	1.8	4	0.9	1.4
Hs.16606	AA452497	788242	1.84	5.21	2.8	3.2	1.4	2.8	4	4	2.3	2
Hs.92381	AA430351	768643	4.05	11.32	2.8	1.3	4	2.2	3.7	4	1.2	2.4
Hs.198613	H17121	51178	0.57	1.39	2.4	4	1.3	3	1.4	4	0.6	0.6
Hs.183056	AA405624	772477	2.41	7.06	2.9	3.5	1.8	4	2.5	4	1.4	2.6
Hs.198532	AA171463	610113	6.07	16.16	2.7	4	1.1	3.8	1.8	4	1.6	0.9
Hs.180139	AA775415	878130	53.25	157.52	3	4	2.4	3.4	2.1	4	1.1	1.7
Hs.25220	AA029754	470092	0.61	1.72	2.8	3.1	1.4	2.7	4	4	1.7	1.1
Hs.106909	AA431408	782385	6.53	19.18	2.9	2.9	1.2	4	3.8	4	1.3	1.3
Hs.35101	AA430552	770074	2.1	6.71	3.2	3.9	2.7	2.8	3.3	3.9	0.7	1.6
Hs.61341	AA026332	366407	1.49	4.11	2.8	3.4	0.8	3.9	2.9	3.9	0.9	1.5
Hs.108894	H29718	52974	3.9	11.42	2.9	3.9	1.7	3.1	3	3.9	1.9	3
Hs.62663	AA044205	486279	2.05	5.53	2.7	1.1	3.2	2.6	3.9	3.9	1.5	1.4
Hs.57079	N24401	261745	3.6	9.18	2.5	3.5	1.3	3.9	1.5	3.9	0.6	1.3
Hs.93379	AA872402	1472753	21.69	57.11	2.6	3.4	1.5	3.9	1.7	3.9	0.9	0.9
Hs.26912	AA421754	738946	0.77	1.85	2.4	3.9	0.8	3.2	1.7	3.9	1	0.9
Hs.6232	AA491395	825843	2.42	7.52	3.1	3.5	2.2	2.8	3.9	3.9	0.8	2
Hs.28113	H90577	241798	0.5	1.44	2.9	2	1.9	3.9	3.7	3.9	1.3	1.4
Hs.183501	H70140	213523	4.38	12.47	2.8	1.4	3	3.1	3.9	3.9	0.9	2.2
Hs.215636	H02824	151365	0.32	0.79	2.5	3.2	2	3.9	0.9	3.9	1	0.6
Hs.79381	R25989	132637	1.64	4.91	3	3.4	1.8	2.9	3.9	3.9	0.9	1.5
Hs.216854	AA497122	823575	0.68	2.19	3.2	2.9	2.5	3.9	3.7	3.9	1.1	1.2
Hs.43881	AA459045	814369	1.04	2.92	2.8	1.9	1.7	3.9	3.7	3.9	1.9	2.1
Hs.220320	AA010351	430218	3.83	10.59	2.8	3.3	0.9	3.9	3	3.9	1.3	1.9
Hs.12702	AA173610	595637	23.75	71.77	3	2.7	2.4	3.9	3.1	3.9	0.6	1.7
Hs.183428	N21470	265868	0.93	2.31	2.5	3.9	0.5	2.3	3.2	3.9	0.6	0.7
Hs.155418	AA458653	813426	2.14	6.43	3	3.5	2.6	2.1	3.9	3.9	1	1.5
Hs.50450	N74189	298523	3.8	9.4	2.5	3.9	1.2	3	1.8	3.9	1.3	1.4
Hs.198166	H17364	50765	0.59	1.71	2.9	3	1	3.8	3.9	3.9	0.6	1.1
Hs.114140	AA702740	383967	1.36	3.63	2.7	1.8	1.4	3.9	3.5	3.9	1	2.7
Hs.23796	AA235370	687667	0.3	0.85	2.8	3.4	1.6	3.8	2.4	3.8	1.6	2
Hs.219727	AA190629	627118	7.44	20.82	2.8	3.8	1.4	3.8	2.2	3.8	0.8	1.7
Hs.19686	W81617	347702	0.13	0.35	2.6	2	1.7	3.8	3	3.8	0.7	2.3
Hs.107127	N62924	278687	1.63	4.74	2.9	3.1	3.8	2.1	2.6	3.8	0.9	2.8

Table 1

Hs.74519	R61073	42325	3.35	9.31	2.8	2.1	2.1	3	3.8	3.8	2.7	1.4
Hs.217676	AA420992	731255	3.14	7.68	2.4	1.8	0.6	3.6	3.8	3.8	1.3	1.1
Hs.3828	N50834	280934	0.16	0.42	2.7	2.5	0.9	3.5	3.8	3.8	0.5	0.5
Hs.173933	AA598615	898228	6.57	14.14	2.2	0.6	0.5	3.7	3.8	3.8	1	1.3
Hs.6483	N59716	246703	2.97	7.86	2.6	2	1.3	3.8	3.5	3.8	1.6	1.1
Hs.121068	H87106	252382	9.18	25.95	2.8	3.3	1.9	2.4	3.8	3.8	1.3	1
Hs.8054	AA461616	796598	3.64	11.04	3	3.8	1.6	2.9	3.8	3.8	1.9	2.3
Hs.169992	AA457092	810408	17.72	45.26	2.6	3.8	0.8	3.4	2.2	3.8	0.7	1
Hs.17969	AA489309	842847	0.62	1.62	2.6	1.9	1.2	3.8	3.6	3.8	0.8	0.8
Hs.110031	AA463789	796498	5.12	14.73	2.9	3.8	1.8	3.2	2.8	3.8	1.1	1.7
Hs.5375	AA620611	1048702	5.86	16.8	2.9	3.8	1.7	3.1	2.9	3.8	0.7	1.8
Hs.24170	N79142	290560	2.45	7.41	3	3.8	2.3	2.9	3.2	3.8	0.9	2.6
Hs.169117	H62009	209182	0.47	1.21	2.6	1.6	1.3	3.8	3.6	3.8	1.2	1.4
Hs.110771	AA188789	626208	8.39	20.04	2.4	3.8	1.3	1.5	3.1	3.8	0.5	1.2
Hs.11673	AA706901	451649	4.07	10.01	2.5	1.6	1	3.5	3.8	3.8	2.1	1.7
Hs.111449	AA282707	713205	13.37	40.21	3	3.5	2.4	3.8	2.4	3.8	1.3	2
Hs.191515	AA453755	813691	3.53	8.92	2.5	0.6	3.8	2	3.7	3.8	2	0.7
Hs.18645	N47813	259950	1.84	5.2	2.8	3.3	1.5	3.8	2.8	3.8	0.8	1.8
Hs.202731	H45810	188151	0.85	2.54	3	2.7	3.4	3.8	2	3.8	2.4	1
Hs.57898	AA193486	665973	3.15	9.27	2.9	2.4	2.4	3.3	3.8	3.8	1.9	2.7
Hs.172466	W52104	324451	2.68	7.02	2.6	3.3	1.4	3.7	2	3.7	1.7	1.7
Hs.58609	W38600	302541	4.11	11.19	2.7	3.7	1.3	2.6	3.3	3.7	1.6	2.1
Hs.77367	AA131506	503617	0.75	2.3	3.1	3.7	3.7	2.9	1.9	3.7	1.2	1
Hs.108371	AA448735	786048	1.47	3.89	2.6	2	1.8	3	3.7	3.7	1.6	2.6
Hs.121559	R96579	199577	2.7	7.35	2.7	3.5	1.3	3.7	2.4	3.7	1.3	1.5
Hs.27693	AA678009	431796	3.56	9.51	2.7	3.7	2.2	3.2	1.6	3.7	1.1	1.4
Hs.119387	AA434402	770875	0.3	0.74	2.5	3.7	1.4	3.2	1.7	3.7	1	1.9
Hs.8173	N59486	246800	8.36	22.38	2.7	3.7	1.1	2.2	3.7	3.7	0.7	2
Hs.216191	R10011	128792	1.75	4.93	2.8	3.7	1.6	3.5	2.5	3.7	0.9	1.3
Hs.8989	T83630	113048	2.06	5.7	2.8	3.6	1.1	3.7	2.7	3.7	0.9	1.3
Hs.214154	W85847	416320	1.45	3.61	2.5	3.7	1.4	3.4	1.6	3.7	1.5	1.7
Hs.96413	W90522	418185	0.48	1.14	2.4	3.6	1	3.6	1.2	3.6	0.6	0.3
Hs.7941	N62403	288681	0.23	0.61	2.7	2.6	3.6	3.1	1.3	3.6	1.6	1.1
Hs.91073	AA418119	767477	1.27	3.46	2.7	2.6	1.4	3.3	3.6	3.6	1.3	1.9
Hs.182237	H38522	192694	2.19	5.9	2.7	3.6	1.2	3.5	2.4	3.6	1.5	1.1

Table 1

Hs.168352	N94230	293792	3.32	8.69	2.6	2.2	1.4	3.6	3.3	3.6	1	1.8
Hs.3842	AA464568	810558	21.16	55.21	2.6	3.5	1.1	2.2	3.6	3.6	1.3	1.7
Hs.10710	AA598505	898147	2.13	5.98	2.8	3.6	1.5	3.5	2.5	3.6	1	1.2
Hs.10065	AA488825	824802	3.12	8.64	2.8	3.6	2	3.3	2.1	3.6	0.8	1.7
Hs.210749	AA456325	813189	4.82	13.29	2.8	2.9	1.1	3.4	3.6	3.6	0.8	1.1
Hs.61763	AA099522	489594	0.62	1.77	2.8	3	1.5	3.4	3.6	3.6	1.7	2.8
Hs.192023	AA936783	1486109	78.43	204.26	2.6	3.2	1.1	3.6	2.5	3.6	1.1	1.6
Hs.179747	W47260	324180	0.83	2.14	2.6	2.2	1.4	3.6	3	3.6	1	1.1
Hs.6076	AA455693	813983	10.99	29.41	2.7	3.6	1.8	3.6	1.8	3.6	1.3	2.5
Hs.217553	AA490561	823627	1.51	4.2	2.8	3.1	1.8	3.6	2.7	3.6	0.9	1.8
Hs.16520	W04713	320455	2.23	5.83	2.6	1.4	2	3.6	3.5	3.6	1.9	1.8
Hs.65029	AA025884	365826	0.16	0.45	2.8	1.8	3.4	3.6	2.4	3.6	1.2	1.2
Hs.178485	AA004832	429129	5.97	15.44	2.6	3.6	1.3	3.1	2.4	3.6	1	1.8
Hs.6985	R43017	31869	0.1	0.26	2.6	3.1	1.2	3.6	2.5	3.6	0.4	0.3
Hs.212625	R42182	30580	5.22	13.59	2.6	2.3	1.2	3.5	3.5	3.5	2.1	1.1
Hs.49703	W32096	321434	0.22	0.51	2.4	3.5	0.8	3.5	1.7	3.5	0.9	1.2
Hs.187630(85)		682477	0.19	0.54	2.8	2.4	1.9	3.5	3.5	3.5	2.1	2.9
Hs.111515	AA459727	796309	13.59	35.05	2.6	1.6	3.4	3.5	1.8	3.5	1.3	2
Hs.12214	AA431773	782503	0.53	1.29	2.4	3	3.5	2.4	0.8	3.5	1.2	1.4
Hs.75183	H50500	179403	0.78	1.72	2.2	3.5	0.6	1.2	3.5	3.5	1.4	2
Hs.84981	AA775355	878676	35.63	88.5	2.5	3.5	0.7	3.5	2.2	3.5	0.8	2
Hs.129520	AA430093	781049	1.28	3.22	2.5	2.4	1	3.5	3.2	3.5	2.1	2.5
Hs.218966	AA018979	362926	0.71	1.87	2.6	3.5	1.4	3.5	2.2	3.5	0.7	1.1
Hs.219713	AA463323	796921	8.4	22.65	2.7	2.6	1.5	3.2	3.5	3.5	2.1	2.3
Hs.140628	AA463793	796510	1.29	3.23	2.5	2.2	1.2	3.5	3.1	3.5	1.6	1.2
Hs.111081	AA479954	753625	8.5	22.37	2.6	2	2	3.5	3	3.5	1.5	1.7
Hs.15917	N72878	291537	1.03	2.82	2.7	3.5	1.4	2.8	3.3	3.5	1.4	1.5
Hs.218784	W07068	300055	5.81	15.87	2.7	3.4	1.3	3.5	2.7	3.5	1	1.3
Hs.208242	R20813	130136	0.22	0.55	2.5	1.7	1.5	3.5	3.4	3.5	0.6	1.7
Hs.191342	N33012	272879	1.48	3.21	2.2	0.9	1.4	3	3.5	3.5	1.3	1.5
Hs.1608	H59259	204299	2.17	5.27	2.4	0.6	2.6	3.5	3	3.5	1.9	2.4
Hs.183655	W47156	324745	2.23	5.74	2.6	3.1	1.2	3.5	2.6	3.5	1	1.6
Hs.169388	AA490911	824552	0.22	0.57	2.6	1.6	3.1	3.5	2.2	3.5	0.7	1.1
Hs.3758	AA464305	809858	1.54	3.88	2.5	3.4	0.8	2.4	3.4	3.4	2.4	1.9
Hs.91417	R97836	200136	1.56	4.07	2.6	1.9	2.1	3	3.4	3.4	2	2.8

Table 1

Hs.43627	AA866160	1469425	0.54	1.31	2.4	0.7	3.4	2.3	3.3	3.4	0.7	1.8
Hs.514	AA451817	795296	6.32	15.31	2.4	3.4	1.6	3	1.7	3.4	0.8	1.6
Hs.16063	AA464700	810221	1.95	5.26	2.7	2.9	1.2	3.4	3.3	3.4	0.8	1.4
Hs.172909	W15521	320157	2.64	6.58	2.5	3.4	1.1	2.3	3.1	3.4	1.3	2.1
Hs.75790	AA732983	399049	2.6	7.3	2.8	3.4	1.6	3.4	2.9	3.4	2.3	0.9
Hs.83530	W03488	291091	3.07	8.61	2.8	2.1	2.5	3.4	3.3	3.4	1.4	1
Hs.217639	AA167113	595604	10.23	26.69	2.6	3.3	1.2	3.4	2.5	3.4	0.9	1.7
Hs.181013	AA676970	897177	98.12	228.45	2.3	3.4	1.4	3.4	1.2	3.4	1	1.2
Hs.194718	AA452256	786592	5.53	14.45	2.6	1.3	2.4	3.4	3.4	3.4	2	2.1
Hs.26625	AA151003	505032	0.64	1.53	2.4	3.2	1.2	3.4	1.8	3.4	1	1.1
Hs.184544	AA169159	609980	29.59	71.71	2.4	3.3	0.8	3.4	2.2	3.4	0.3	1
Hs.117582	N90608	306300	0.51	1.28	2.5	2	1.6	3.2	3.4	3.4	2.2	1.3
Hs.79876	H15215	49591	4.59	11.53	2.5	3.2	0.7	2.7	3.4	3.4	2.1	2.3
Hs.173023	R38306	137457	3.35	8.76	2.6	2.7	1.2	3.2	3.4	3.4	1.3	1.3
Hs.22983	AA424632	767187	1.35	3.16	2.3	3.4	1	1.8	3.2	3.4	0.9	1.2
Hs.20295	N73242	246524	1.5	3.63	2.4	3.1	1.3	3.3	1.9	3.3	1.2	2.8
Hs.220037	W03373	291185	1.7	4.26	2.5	2.1	1.5	3.3	3.1	3.3	0.7	1
Hs.219456	AA135813	565733	21.67	58.3	2.7	3.1	1.8	3.3	2.5	3.3	1	2.9
Hs.4900	AA482110	756378	10.19	25.76	2.5	3.3	1.3	3.1	2.4	3.3	1	1.6
Hs.10082	AA443903	756708	0.25	0.6	2.4	1.6	3.1	1.6	3.3	3.3	2.3	2.3
Hs.15265	AA486402	842861	7.87	20.47	2.6	3.3	1.5	3.3	2.4	3.3	1	1
Hs.89640	H02848	151501	0.83	1.88	2.3	3	1.2	3.3	1.6	3.3	1.2	1
Hs.214664	R66540	141234	2.95	8.5	2.9	3.3	2.8	3.2	2.3	3.3	0.9	0.9
Hs.88110	AA255900	686594	2.55	5.38	2.1	3.1	1.3	3.3	0.7	3.3	1	0.3
Hs.6671	AA490731	824061	11.6	27.67	2.4	3	1.4	3.3	1.9	3.3	0.6	0.8
Hs.89650	R68805	141972	9.72	23.42	2.4	3	0.8	3.2	2.6	3.2	1.1	2.2
Hs.219178	N49478	277621	1.31	3.28	2.5	3.2	0.9	3.2	2.8	3.2	0.5	2
Hs.216896	N78843	302310	1.12	2.88	2.6	3.2	1.1	3.2	2.8	3.2	2.5	1.8
Hs.7922	H80103	233308	6.92	17.93	2.6	3.1	2.1	3.2	2	3.2	1.8	2.1
Hs.108957	AA157472	590338	20.12	49.8	2.5	1.2	3.2	2.4	3.2	3.2	0.7	0.8
Hs.21122	AA779217	453999	1.43	3.56	2.5	3.2	1.7	1.9	3.2	3.2	0.8	1.4
Hs.119155	AA479503	754312	1.34	3.26	2.4	1.4	2	3.2	3.2	3.2	1.6	1.5
Hs.109212	H39221	190915	0.47	1.09	2.3	1	2	3	3.2	3.2	1.7	2.2
Hs.81665	N36279	269806	0.72	1.46	2	3.2	1.3	3	0.6	3.2	0.7	0.4
Hs.152925	T64956	66815	2.41	6.78	2.8	2.6	3.2	2.4	3.1	3.2	0.7	1.4

Table 1

Hs.214097	R45056	34773	2	4.47	2.2	3.2	0.8	3.1	1.8	3.2	0.9	1.1
Hs.25253	AA489636	823688	0.64	1.78	2.8	3.1	3.2	2.9	2	3.2	0.8	1.5
Hs.95734	AA133778	503541	0.26	0.54	2.1	1.5	0.5	3.1	3.1	3.1	2.7	2.3
Hs.127756	AA131358	503581	0.24	0.5	2.1	3.1	0.6	3.1	1.5	3.1	1.3	1.2
Hs.110713	H09636	46213	2.35	6.05	2.6	1.5	3.1	3.1	2.5	3.1	1.6	2.5
Hs.204335	AA127058	502200	6.64	16.56	2.5	3.1	1.5	3.1	2.3	3.1	1.1	1.1
Hs.183755	AA455010	811941	0.33	0.76	2.3	1.8	1.3	3.1	3	3.1	1.6	0.8
Hs.115498	AA489904	839904	10.05	25.98	2.6	3.1	1.5	3.1	2.7	3.1	0.7	0.6
Hs.44499	AA707321	451504	2.68	6.66	2.5	3.1	1.6	3.1	2.2	3.1	1.2	2.3
Hs.20423	AA703496	450013	2.55	4.83	1.9	3	0.6	3.1	0.9	3.1	0.7	1
Hs.167790	AA425545	768965	10.03	22.85	2.3	3.1	0.8	3.1	2.2	3.1	0.6	0.9
Hs.154443	AA458551	811953	4.09	10.17	2.5	3.1	1.5	3.1	2.3	3.1	0.4	2.2
Hs.109643	H92758	231802	1.88	4.31	2.3	1	2.1	3	3.1	3.1	1.2	1.1
Hs.11732	AA009773	429799	2.16	5.07	2.3	2	1.4	3	3	3	1	1.2
Hs.78122	AA459542	810927	0.35	1.09	3.1	2.8	1.5	2.8	5.5	5.5	4.2	3.7
Hs.17589	W89066	417409	1.13	2.87	2.6	5.1	0.8	2.9	1.3	5.1	3.2	4.6
Hs.60242	AA007623	429439	1.01	2.33	2.3	0.7	4.3	1.3	2.9	4.3	3.8	3.7
Hs.219678	T84975	111812	3.1	8.46	2.7	2.1	2.1	2.8	3.9	3.9	3.6	3.6
Hs.7644	T66816	66317	3.44	7.37	2.1	1.9	3.7	1.9	1.2	3.7	4.5	6.9
Hs.38044	AA476234	771317	6.52	17.5	2.7	3.7	1.8	2.4	2.8	3.7	3.1	3.9
Hs.165986	N42062	259905	0.74	1.49	2	0.7	2.3	1.9	3.2	3.2	3.3	3.1
Hs.119651	AA775872	878564	1.27	11.74	9.2	33.2	0.6	2.1	1	33.2	3.3	1.6
Hs.99357	AA454149	795308	0.1	0.46	4.6	1.3	15.1	1.1	1	15.1	0.3	3.6
Hs.24697	N41645	257329	0.42	2.08	4.9	2.1	1	2	14.6	14.6	3.4	1.4
Hs.73980	AA868929	1409509	0.74	3.07	4.1	0.8	12.4	2.3	1	12.4	0.6	3.5
Hs.218748	H80063	249070	0.33	1.24	3.8	10	1.7	2.1	1.4	10	0.5	3.6
Hs.214197	AA453728	813841	1.89	7.04	3.7	2.6	9.1	1	2.1	9.1	1.7	6.9
Hs.16426	N80294	290378	0.72	2.03	2.8	0.9	0.9	2	7.4	7.4	2.2	3.2
Hs.216933	AA455588	813514	1.04	2.79	2.7	1.9	1.1	1.5	6.2	6.2	2.7	3.4
Hs.39158	H95342	234419	0.1	0.25	2.5	5.9	0.8	2.3	1	5.9	1.2	4.2
Hs.99743	AA504120	825207	15.92	53.02	3.3	5.8	2.8	3	1.8	5.8	3.6	1.5
Hs.215231	AA292226	725877	0.64	1.7	2.7	1.4	1.9	1.7	5.6	5.6	0.9	4.6
Hs.20225	AA911900	1457350	1.56	4.61	3	2.1	1.3	2.9	5.6	5.6	2.7	3.1
Hs.62461	AA034103	470930	0.33	0.93	2.8	5.3	2.2	2.1	1.5	5.3	1.5	4.8
Hs.20418	N99711	290841	4.46	11.26	2.5	1.4	1.8	1.6	5.3	5.3	2.5	3.8

Table 1

Hs.135287	N48252	282047	0.36	0.83	2.3	2.1	1.2	5.2	0.8	5.2	0.8	3
Hs.61514	AA148573	491311	0.38	0.95	2.5	2.6	1.6	5	0.9	5	1.1	3.9
Hs.108738	H91614	241648	1.67	3.82	2.3	1.9	1.3	4.9	1	4.9	2.7	3.4
Hs.214183	AA488413	843046	0.34	0.69	2	0.7	1.6	4.8	1	4.8	1.2	3.9
Hs.35861	AA125792	502664	0.29	0.71	2.4	1.2	4.8	2.5	1.3	4.8	1.4	3.8
Hs.89472	H66070	210687	0.96	2.39	2.5	4.7	1.1	2.8	1.3	4.7	1.4	3.4
Hs.151506	N68399	292399	2.03	4.53	2.2	1.2	1.6	1.4	4.7	4.7	2.7	3.1
Hs.99838	AA490611	824126	0.99	2.66	2.7	2.4	1.5	4.7	2.2	4.7	2.3	3.4
Hs.99853	AA663986	855755	4.79	9.86	2.1	0.7	4.7	1.1	1.7	4.7	1.1	3.6
Hs.191555	AA056381	509457	0.21	0.44	2.1	4.7	1.1	1.6	1.1	4.7	0.8	3.7
Hs.43628	N25204	270136	2.07	6.32	3.1	2.3	2.4	2.9	4.6	4.6	2.2	3.6
Hs.102510	N59835	289055	1.22	3.09	2.5	4.6	0.8	2.5	2.3	4.6	1.3	5.5
Hs.15654	T90920	111571	3.19	9.18	2.9	2.8	1.2	4.6	2.9	4.6	1.8	3.3
Hs.62578	AA137000	491097	1.95	3.37	1.7	0.5	4.6	0.5	1.3	4.6	0.5	6.2
Hs.39168	W92258	358984	0.11	0.22	2	4.6	0.5	1.9	0.9	4.6	2	3.3
Hs.218235	N62339	290399	42.96	113.04	2.6	4.5	1	2.3	2.7	4.5	0.9	5.4
Hs.155637	R30849	133637	2.34	5.89	2.5	0.9	4.5	1.8	2.9	4.5	2.8	3.8
Hs.69547	H17080	50043	0.38	0.82	2.1	4.5	0.8	2.3	1	4.5	1	3.2
Hs.6891	AA169645	594517	9.35	25.13	2.7	2.5	1.1	4.5	2.7	4.5	1.1	3.3
Hs.81505	N48027	272073	0.23	0.6	2.6	4.4	0.9	2.9	2	4.4	1.5	6.5
Hs.46668	N50301	280327	0.94	1.78	1.9	0.4	4.4	0.8	1.9	4.4	1.2	3.4
Hs.73793	R19956	34778	0.23	0.55	2.4	2.3	0.8	4.4	2.2	4.4	1.1	7.3
Hs.22142	AA425475	773106	5.63	12.1	2.2	4.3	1.3	1.5	1.5	4.3	1.2	5.3
Hs.78637	H15446	49352	9.84	21.48	2.2	1.5	0.7	2.2	4.3	4.3	2.1	3.7
Hs.155017	AA458503	809627	0.68	1.55	2.3	4.3	0.8	2.5	1.5	4.3	1.4	3.1
Hs.48026	N57557	279963	1.01	2.21	2.2	4.3	0.9	1.1	2.5	4.3	1.4	6.7
Hs.5105	AA195647	665144	1.68	3.62	2.2	1.2	1.6	1.6	4.2	4.2	2.8	4.1
Hs.203698	N57722	246659	0.51	1.31	2.6	1.4	2.1	2.5	4.2	4.2	1.4	4.2
Hs.99756	AA448729	786037	6.38	17.03	2.7	2.5	1.4	4.1	2.6	4.1	1.2	3.1
Hs.143434	H19023	51226	0.59	1.41	2.4	2.2	1.3	4.1	1.8	4.1	1.6	3.8
Hs.9800	AA609904	1032103	3.01	7.21	2.4	2	1.2	4.1	2.3	4.1	1.8	3.2
Hs.2012	AA155695	592243	5.27	6.59	1.3	0.1	0.5	4.1	0.4	4.1	0.4	5.5
Hs.11217	AA478670	754111	0.49	1.24	2.6	1.7	2	2.5	4	4	1.2	3.2
Hs.217307	AA458994	814270	0.7	1.81	2.6	1.6	4	2.1	2.6	4	1.9	3.3
Hs.51483	T60926	83746	0.1	0.22	2.2	2.1	0.8	4	1.8	4	2.4	3.7

Table 1

Hs.92423	AA399218	726434	0.57	1.46	2.5	2.1	1.2	2.9	4	4	1.5	3.5
Hs.124970	AA478721	753597	0.1	0.21	2.1	0.8	1.6	2	3.9	3.9	1.7	3.2
Hs.195496	AA027239	469151	9.51	24.94	2.6	2.8	2.1	3.9	1.7	3.9	1.2	3.1
Hs.42796	AA446881	784238	1.74	3.7	2.1	1.6	1.1	2	3.9	3.9	0.8	3.6
Hs.220305	AA682545	431245	1.51	3.34	2.2	3.8	1.1	1.8	2.1	3.8	2.2	3.4
Hs.220133	AA047803	380245	0.1	0.15	1.5	0.1	1.5	0.8	3.8	3.8	0.8	3.2
Hs.28392	R63137	137989	2.56	5.55	2.2	2.2	1.4	1.4	3.7	3.7	0.6	5.9
Hs.191598	AA416843	731290	1.45	3.86	2.7	2.9	3.7	1.9	2.1	3.7	4.5	2.2
Hs.153752	AA448755	786067	1.04	1.83	1.8	1	3.7	0.9	1.5	3.7	2.4	3.2
Hs.203316	R68539	137797	1.67	3.84	2.3	3.7	1.9	2.8	0.9	3.7	0.7	3.4
Hs.52438	N36704	269231	6.17	15.21	2.5	3.6	1	2.3	3	3.6	1	3
Hs.26864	AA402247	727263	1.78	3.71	2.1	0.9	2	1.8	3.6	3.6	3.3	2.8
Hs.138517	N70411	297021	0.57	1.36	2.4	3.6	1.2	2.7	2	3.6	1.5	4.4
Hs.9081	AA465541	815072	13.58	21.93	1.6	1.3	0.7	3.6	0.9	3.6	1.3	4.2
Hs.219757	R24450	132954	1.38	3.17	2.3	2.1	1.4	3.6	2.1	3.6	1.1	4
Hs.23945	R62460	36367	12.36	24.48	2	3.5	1.2	1.4	1.8	3.5	2.7	4.1
Hs.9829	H54285	203348	0.14	0.35	2.5	2	2	2.5	3.5	3.5	0.8	3.4
Hs.76293	AA486085	840788	95.97	223.27	2.3	1.8	3.5	1.9	2	3.5	1.3	3.3
Hs.104123	AA197344	627688	6.3	14.6	2.3	1.5	2	2.3	3.5	3.5	2.6	8.4
Hs.102497	AA430573	770080	0.9	2.33	2.6	2.7	2.6	1.5	3.5	3.5	1.6	3
Hs.7854	AA453577	795198	2.81	6.47	2.3	1.8	2.4	1.5	3.5	3.5	1.7	3.9
Hs.163719	R34566	136506	1.15	2.51	2.2	1.2	1.9	3.5	2.1	3.5	0.7	5.8
Hs.7859	H24108	51921	5.83	15.02	2.6	1.6	2.9	3.5	2.3	3.5	1	4.1
Hs.219116	AA482117	756401	2.5	4.87	1.9	1.2	1.8	1.4	3.5	3.5	1	3.3
Hs.85181	N99372	290866	0.17	0.43	2.6	2.8	1.7	3.5	2.2	3.5	0.2	3.2
Hs.41644	AA454033	795446	0.1	0.2	2	3.4	0.8	2.4	1.3	3.4	0.7	5.2
Hs.179999	AA282712	713031	1.98	3.83	1.9	1.4	1.3	3.4	1.6	3.4	1.3	3.2
Hs.14779	AA464329	809894	2.39	4.77	2	3.4	1.1	2.3	1.2	3.4	1.4	3.5
Hs.48712	N63102	284787	0.45	1.02	2.3	1.2	3.4	1.9	2.7	3.4	1.8	3
Hs.118113	N63996	289499	1.75	3.66	2.1	3.4	1.5	2.3	1.3	3.4	0.8	3.1
Hs.121921	AA777435	449384	0.88	1.88	2.1	1.1	1.2	2.9	3.4	3.4	4.3	0.7
Hs.191337	AA455566	813490	3.13	8.23	2.6	3.3	2.5	2.3	2.4	3.3	2	4
Hs.79572	N20475	264117	0.95	2.4	2.5	3.3	1.8	2.4	2.5	3.3	2.1	3.1
Hs.25300	R38917	24718	2.1	3.79	1.8	1.8	1.2	0.9	3.3	3.3	3.6	1.2
Hs.12598	AA452652	788317	8.62	22.97	2.7	2.9	2	2.4	3.3	3.3	1.4	3.7

Table 1

Hs.115474	H94617	256260	2.9	6.7	2.3	2.1	1.2	3.3	2.7	3.3	1.5	5.3
Hs.106131	AA455510	809733	1.94	4.49	2.3	2.1	3.3	2.5	1.4	3.3	0.9	3.5
Hs.122575	AA419064	755526	0.13	0.31	2.5	1.8	3.3	2.1	2.6	3.3	2.3	3.4
Hs.169420	AA043806	487338	3.31	9.23	2.8	2.7	2.4	2.8	3.3	3.3	2.4	3
Hs.30954	H09914	46897	0.1	0.25	2.5	2.5	1.9	3.2	2.3	3.2	2	3.3
Hs.74124	AA865729	1469234	0.64	1.15	1.8	1.6	0.8	1.5	3.2	3.2	0.9	4
Hs.60090	AA004806	429128	1.72	3.53	2.1	2.3	1.7	1	3.2	3.2	1	3.5
Hs.78040	H30877	184175	0.13	0.33	2.5	2.8	1	3.2	2.9	3.2	1.6	3.2
Hs.200320	T86983	112804	4.72	10.49	2.2	2	2.1	3.2	1.5	3.2	2.7	3
Hs.31137	AA464542	810515	0.4	0.88	2.2	3.2	1.8	2.1	1.6	3.2	1.3	3.9
Hs.13794	AA459393	810945	1.06	2.81	2.7	1.5	3	3.2	3	3.2	1.5	3.1
Hs.173724	AA894557	1416782	1.32	2.23	1.7	1	3.2	1.4	1.2	3.2	1.5	3.5
Hs.82280	AA709036	506548	5.39	11.22	2.1	2.3	1.4	1.4	3.1	3.1	1	5.2
Hs.199123	N49751	282310	0.74	1.78	2.4	2.6	0.9	3.1	3	3.1	1.7	3.1
Hs.173374	AA431438	782460	1.03	2.85	2.8	3.1	2.3	2.7	2.9	3.1	1	3.7
Hs.23311	AA447773	813828	0.47	1.19	2.5	1.8	3.1	2.8	2.3	3.1	1	7.2
Hs.133466	AA488181	877646	0.12	0.23	1.9	1.5	1.6	3.1	1.4	3.1	0.3	7.5
Hs.6425	AA488970	824897	5.07	11.22	2.2	2.3	1.3	2.1	3.1	3.1	1.9	3.8
Hs.3229	AA497111	823562	0.18	0.36	2.1	2	1.1	2	3.1	3.1	3.8	1.8
Hs.4269	AA419602	752634	1.75	4	2.3	2.2	1.9	2	3.1	3.1	2.5	3.6
Hs.43899	AA464622	812987	3.97	9.34	2.4	3.1	1.5	2.1	2.7	3.1	1.3	3.4
Hs.12107	N25578	267725	0.18	0.26	1.4	0.3	1.3	1.1	3.1	3.1	1.3	3.2
Hs.687	AA404692	724888	0.99	1.69	1.7	0.3	0.9	2.6	3.1	3.1	3.9	0.5
Hs.103267	W96184	361656	0.1	0.23	2.3	1.9	3.1	2.3	1.9	3.1	1.5	3
Hs.80691	AA460480	795965	1.18	2.26	1.9	1.2	1.3	3.1	2.1	3.1	3.6	1.1
Hs.12017	AA458578	837953	1.48	3.75	2.5	2.3	3.1	2.1	2.7	3.1	1.3	3.4
Hs.25897	W65409	342399	2.31	4.36	1.9	1.4	0.7	2.4	3.1	3.1	2.5	4.1
Hs.91244	AA452802	788526	0.97	1.82	1.9	0.7	2.1	1.6	3.1	3.1	4	2.2
Hs.75339	AA279072	703964	0.1	0.17	1.7	3.1	0.4	1.2	2.3	3.1	1.1	3.4
Hs.5985	H48472	200599	2.97	7.38	2.5	1.8	2.4	3.1	2.6	3.1	1.1	5.2
Hs.2057	AA426227	760344	6.37	15.44	2.4	2.3	1.6	2.7	3	3	2.1	3.3
Hs.8047	AA430675	770424	0.64	1.48	2.3	1.6	3	2.8	1.8	3	2.8	5
Hs.30488	H15274	49595	2.28	4.87	2.1	1.2	2.6	3	1.7	3	2.1	3.8
Hs.131525	R34225	136026	3.47	8.79	2.5	2.3	2.5	3	2.4	3	1.7	3.5
Hs.58104	AA082304	366209	0.11	2.21	20.5	0.8	1.2	79.1	0.7	79.1	0.7	1

Table 1

Hs.80876	H71848	214816	0.45	5.52	12.2	2	1	44.7	1	44.7	1	1.7
Hs.78534	AA427789	773367	0.1	1.07	10.7	0.2	40.9	1.1	0.5	40.9	0.7	0.5
Hs.28890	AA430639	769947	0.1	1.09	10.5	40	1.5	0.2	0.2	40	1.3	0.8
Hs.198396	AA054358	380737	0.56	5.05	9	1.3	0.8	0.9	32.9	32.9	0.9	0.8
Hs.99376	AA456254	811883	0.52	4.73	9.1	31.3	2.2	1.4	1.4	31.3	1	1
Hs.65248	H05552	43865	0.37	3.16	8.5	30.8	0.9	1.2	1.1	30.8	0.1	0.4
Hs.55407	W32715	327480	0.19	1.3	6.9	0.9	24.1	1	1.5	24.1	0.8	1.2
Hs.198708	N58494	248261	0.26	1.53	5.9	1.7	19.5	1.5	1.1	19.5	1.7	2.1
Hs.75180	T64887	66715	0.1	0.59	5.9	0.7	19.2	3	0.6	19.2	0.2	0.6
Hs.72157	AA464691	810224	1.39	8.83	6.4	2.8	2.1	2.3	18.2	18.2	1.5	1
Hs.104830	AA421242	731047	0.9	5.45	6	2.8	2.2	1.1	18	18	1.6	0.8
Hs.99367	AA456454	809503	2.59	11.52	4.4	0.5	0.1	17	0.2	17	2.4	0.6
Hs.214027	N92193	290280	0.18	0.98	5.5	1.6	1.8	16.7	1.9	16.7	2.1	1.6
Hs.215631	AA009763	429773	0.1	0.41	4.1	0.6	15.5	0	0.2	15.5	0.4	0.2
Hs.70725	AA102670	563598	5.53	22.17	4	0.2	1	0.2	14.6	14.6	0.1	0.1
Hs.753	AA425249	773236	1.19	6.05	5.1	13.7	2.2	2.6	1.8	13.7	0.7	1.5
Hs.110040	AA443286	783987	0.1	0.38	3.8	0.4	0	13.5	1.3	13.5	0.7	0.6
Hs.213532	AA425551	773320	0.47	2.03	4.3	1.3	13.3	0.8	2	13.3	1.2	1.7
Hs.200359(85)		220078	0.56	2.59	4.6	3	0.8	12.5	2.3	12.5	1.3	1
Hs.126256	W47101	324655	2.02	8.55	4.2	12.4	1.5	2.3	0.6	12.4	0.3	0.9
Hs.178703	H56344	203711	0.78	2.95	3.8	12.1	1	1.1	1.1	12.1	0.8	1.4
Hs.96563	AA279396	704261	1.04	4.22	4	2.2	1.3	12	0.7	12	1	1.2
Hs.6241	R54049	39808	5.9	21.88	3.7	2.1	0.3	12	0.4	12	0.4	0.1
Hs.218531	AA875933	1492230	1.83	7.65	4.2	1.6	2.5	0.8	11.9	11.9	0.5	1
Hs.7949	N91382	306005	0.28	1.02	3.6	0.5	11.6	0.9	1.3	11.6	1.6	1.3
Hs.56247	W58028	341295	0.68	2.95	4.3	11.3	1.6	2.9	1.5	11.3	0.6	1
Hs.209660	AA011367	429510	1.64	7.36	4.5	11.2	1.7	2.9	2.2	11.2	1.9	1
Hs.21861	N31459	265668	0.56	2.22	4	10.7	1.2	2.3	1.7	10.7	0.9	0.5
Hs.83551	N67487	291880	1.21	4.12	3.4	10.5	1	1.2	0.8	10.5	0.6	1.2
Hs.17483	AA476285	770681	0.68	2.75	4.1	10.5	1.8	2.3	1.6	10.5	0.8	1.1
Hs.37012	AA150918	505059	0.72	2.5	3.5	10.2	0.9	1.7	1	10.2	0.8	0.9
Hs.21273	H17003	50344	0.16	0.61	3.8	1.1	10.2	1.1	2.8	10.2	1.1	0.9
Hs.40202	AA457051	815539	1.16	4.72	4.1	2.2	1.2	2.8	10.1	10.1	0.8	1.2
Hs.25041	H05039	43179	0.83	2.7	3.2	0.8	0.9	9.9	1.4	9.9	0.7	0.3
Hs.30837	H17804	50354	0.34	1.15	3.4	9.9	1.1	1.6	1	9.9	0.5	0.4

Table 1

Hs.28853	N79336	287749	2.54	10.43	4.1	2.4	1.8	9.8	2.4	9.8	1.7	2.3
Hs.174044	AA700736	435341	0.79	2.71	3.4	9.7	0.8	1.6	1.6	9.7	0.3	0.8
Hs.154654	AA448157	782760	1.22	4.65	3.8	9.7	0.9	2	2.7	9.7	0.6	0.5
Hs.101653	H06377	44300	0.1	0.38	3.8	9.7	2.6	1.3	1.6	9.7	0.2	2.1
Hs.74076	AA401693	727292	1.23	4.35	3.5	9.5	1.2	2.2	1.3	9.5	0.8	0.8
Hs.55495	W32227	321346	1.11	3.78	3.4	0.9	1	9.5	2.2	9.5	1.2	1.3
Hs.11383	T64262	80146	4.62	13.7	3	9.2	0.8	1.1	0.7	9.2	0.4	0.8
Hs.60532	AA011593	429678	1.85	6.12	3.3	2.2	0.4	9.2	1.5	9.2	1	0.8
Hs.99068	AA446344	781283	0.76	2.53	3.3	9.1	1.3	1.4	1.4	9.1	1.3	2.3
Hs.788	AA478542	784772	0.62	2.34	3.8	9.1	1.5	2.7	1.9	9.1	0.7	1
Hs.149911	AA436574	753017	0.31	1.05	3.4	1.7	1.5	9.1	1.5	9.1	1.2	1
Hs.2877	AA425556	773301	1.75	6.75	3.9	2.5	9	1.7	2.2	9	0.8	1.8
Hs.220154	AA446782	784154	0.1	0.23	2.3	0.2	9	0.1	0.1	9	0.1	0
Hs.170252	N50556	280758	34.34	126.29	3.7	1.1	2.1	2.7	8.8	8.8	2.4	0.6
Hs.215051	R00275	123255	0.76	2.84	3.7	1.8	2.5	1.8	8.8	8.8	1.2	1.6
Hs.216036	W47324	324690	0.71	2.47	3.5	8.8	1.3	1.9	1.9	8.8	1	0.6
Hs.31720	H50094	179109	1.16	4.29	3.7	8.8	1.4	2.6	2.1	8.8	1.2	1.1
Hs.216036	W51909	324513	0.59	1.9	3.2	8.7	1	1.8	1.3	8.7	0.9	0.6
Hs.179543	H73590	214441	0.1	0.35	3.5	2.6	1.3	8.6	1.3	8.6	1	2.7
Hs.24510	R32248	134856	0.52	1.76	3.4	8.6	2.7	1.3	0.9	8.6	0.9	0.7
Hs.2064	AA487812	840511	4.07	16.26	4	8.6	2.4	2.3	2.8	8.6	1.9	1.7
Hs.105258	AA496949	823618	0.34	1.08	3.2	0.9	8.6	1.6	1.7	8.6	1.4	1.6
Hs.204018	N79301	287676	1.14	4.37	3.8	1.7	2.2	8.5	2.9	8.5	1.5	1.1
Hs.181000	AA461583	795739	0.27	0.87	3.2	8.4	1.8	1.4	1.2	8.4	1.3	1.2
Hs.90708	AA283172	713129	2.87	9.66	3.4	2.5	8.4	2.2	0.4	8.4	0.5	0.7
Hs.9999	W73748	344272	0.23	0.88	3.9	2.8	2.3	2.5	8.1	8.1	0.9	2.3
Hs.10095	R31625	134976	0.38	1.09	2.8	1.1	8	1.1	1	8	2.3	2.1
		276898	0.2	0.67	3.4	1.8	8	1.5	2.3	8	1.6	1.9
Hs.183673	AA160812	592777	0.1	0.22	2.2	0.4	8	0.1	0.1	8	0.1	0.2
Hs.157429	AA775423	878129	0.13	0.38	3	2.1	0.7	1.4	8	8	0.1	1.3
Hs.44426	AA452371	787851	3.58	13.16	3.7	7.9	2	2.6	2.1	7.9	1	0.3
Hs.81988	H54577	203240	0.85	2.78	3.3	7.9	1.5	2.5	1.3	7.9	1	0.7
Hs.44677	N34966	277001	0.5	1.35	2.7	1.2	7.9	0.6	1	7.9	1.1	1
Hs.124158	AA489944	839579	0.1	0.31	3.1	1.5	0.9	7.8	2	7.8	0.7	1.1
Hs.220052	N53133	246620	73.65	214.56	2.9	7.8	0.8	1.7	1.2	7.8	1.2	1.3

Table 1

Hs.70843	AA121632	564408	0.25	0.66	2.7	1.6	7.8	1	0.3	7.8	0.7	0.1
Hs.119529	N39749	256984	0.1	0.32	3.2	7.8	1.5	1.8	1.8	7.8	1.2	1.5
Hs.214329	R96290	197914	0.58	1.54	2.6	7.7	0.7	1.3	0.9	7.7	1	0.7
Hs.1217	AA683578	505881	0.93	2.84	3	2.3	7.7	1	1.2	7.7	1.1	2.1
Hs.101689	H10356	46860	0.64	2.02	3.1	2.6	1.6	7.7	0.7	7.7	0.6	0.7
Hs.101230	R43189	32551	0.1	0.22	2.2	0.2	0	7.6	1	7.6	0.3	0.6
Hs.118559	AA700997	397227	1.35	3.57	2.7	7.6	0.6	1.8	0.6	7.6	0.6	1.1
Hs.23786	AA400292	742685	1.46	4.58	3.1	7.5	1.3	2	1.8	7.5	1	1
Hs.100194	H02307	151201	10.63	36.01	3.4	7.5	2.5	2.6	1	7.5	0.4	0.5
Hs.901	R05416	125134	0.27	0.78	2.9	7.5	0.9	2.1	1	7.5	1.4	0.8
Hs.169825	R61163	42864	0.58	1.53	2.6	7.5	0.6	1.9	0.6	7.5	0.6	0.5
Hs.82749	W21317	307471	2.08	5.53	2.7	7.4	0.5	1.8	0.9	7.4	0.6	0.5
Hs.99664	AA287310	701123	1.09	3.37	3.1	1.8	1.4	1.8	7.4	7.4	1.3	0.6
Hs.75367	AA485141	815774	0.93	3.13	3.4	7.4	1.4	2.9	1.7	7.4	0.4	0.7
Hs.199264	H14723	48886	0.8	2.49	3.1	7.4	1.5	2.9	0.7	7.4	0.6	0.7
Hs.65436	AA405804	742125	0.1	0.39	3.8	7.4	2.3	2.9	2.6	7.4	1	1.3
Hs.98384	AA460529	796624	0.33	0.98	3	7.3	0.9	2.7	1	7.3	0.7	0.5
Hs.92030	AA707199	452016	2.9	7.16	2.5	7.3	0.6	1.6	0.5	7.3	0.9	0.2
Hs.41073	N47469	280750	0.92	3.33	3.6	7.3	2.2	2.1	2.8	7.3	0.7	0.9
Hs.27323	AA490232	824401	0.61	1.6	2.6	0.7	1.3	1.3	7.3	7.3	0.6	1.4
Hs.109703	AA487121	841238	4.42	13.1	3	7.3	1.7	2.4	0.5	7.3	0.4	0.2
Hs.58509	W92946	356949	0.19	0.54	2.8	0.5	2.2	7.2	1.4	7.2	0.7	0.6
Hs.169825	AA029107	470001	0.59	1.7	2.9	7.1	1.7	1.6	1	7.1	1.1	1.1
Hs.62713	AA126599	502568	0.39	1.25	3.2	1.6	1.7	7.1	2.5	7.1	1.1	1.4
Hs.29005	AA775270	878605	0.41	1.52	3.7	2.9	2.6	2.2	7.1	7.1	0.6	1.4
Hs.219830	AA504239	825031	3.37	12.16	3.6	3	1.8	7	2.6	7	0.8	1
Hs.126256	AA150507	491763	1.19	3.07	2.6	7	1.1	1.7	0.5	7	0.7	0.8
Hs.104800	AA417659	752640	32.12	70.86	2.2	0.8	0.3	0.8	6.9	6.9	1.2	0.9
Hs.218472	AA449334	785703	8.48	29.15	3.4	6.9	2.3	1.7	2.8	6.9	1.2	1.6
Hs.192336	AA010250	430169	0.52	1.48	2.8	6.9	1.3	1.7	1.5	6.9	1	0.9
Hs.124955	R60705	41903	0.1	0.29	2.9	0.3	6.9	2.1	2.3	6.9	0.4	0.8
Hs.23076	AA160606	592707	0.1	0.18	1.8	0	6.8	0.1	0.1	6.8	0.1	1.2
Hs.9625	AA463275	796876	0.84	2.72	3.2	6.8	1.4	2.5	2.3	6.8	0.9	1.2
Hs.169756	T62048	85634	8.08	26.85	3.3	6.7	1.4	2.3	2.9	6.7	0.6	0.6
Hs.61957	AA214559	683151	0.94	2.81	3	6.7	1.1	2.6	1.5	6.7	1	0.5

Table 1

Hs.77208	AA044769	487912	0.51	1.56	3.1	6.7	1	2.5	2	6.7	1.5	1.3
Hs.129839	T72691	108651	0.75	2.05	2.7	1.4	1.4	1.4	6.7	6.7	1.3	1
Hs.219025	R60807	42258	1.44	3.1	2.2	6.6	0.7	0.8	0.5	6.6	0.7	0.4
Hs.5245	AA482377	752744	0.33	0.94	2.9	6.6	1.8	1.6	1.5	6.6	0	1.4
Hs.23839	R77864	145284	0.29	0.74	2.6	0.8	1.1	1.7	6.6	6.6	0.9	2.3
Hs.217698	W15339	322511	2.59	6.97	2.7	1.3	1.2	6.6	1.7	6.6	0.6	0.6
Hs.71168	AA129932	501929	0.81	2.35	2.9	6.6	2.2	1.9	1	6.6	1.7	2
Hs.2490	T95052	120106	5.63	12.78	2.3	1	0.8	6.6	0.6	6.6	0.4	0.4
Hs.220188	AA394106	726582	2.01	6.17	3.1	6.6	1.6	2.3	1.8	6.6	0.9	0.7
Hs.87747	R33720	135900	26.41	53.01	2	0.6	0.5	6.5	0.4	6.5	0.5	1.8
Hs.93748	AA489000	824739	2.82	8.34	3	1.6	1.1	6.5	2.6	6.5	1.3	1.5
Hs.21254	AA186426	625584	3.7	10.34	2.8	2	1.1	6.5	1.6	6.5	1.4	1.7
Hs.214417	AA485453	811067	15.13	47.87	3.2	2.5	1.3	6.5	2.5	6.5	0.8	1.5
Hs.54452	AA280931	711680	1	3.16	3.2	2.7	1	6.5	2.4	6.5	1.9	1
Hs.44669	N34943	276905	0.11	0.22	2	0.7	6.4	0.3	0.4	6.4	0.9	1.5
Hs.196887	N91952	306901	0.42	1.21	2.9	6.4	1.2	2.8	1.1	6.4	1.2	0.8
Hs.43322	N28729	266777	1.32	4.07	3.1	2.1	1	6.4	2.9	6.4	1.2	1.1
Hs.155150	W45588	323465	1.29	4.2	3.3	2.8	1	6.4	2.9	6.4	1.8	2
Hs.74466	AA058456	509688	118.28	276.77	2.3	0.2	2	0.8	6.4	6.4	0.8	0.7
Hs.97266	AA704401	450962	1.19	3.13	2.6	6.4	0.5	2.8	0.8	6.4	0.7	0.6
Hs.340	AA425102	768561	2.72	7.75	2.8	6.3	1.5	2.6	1	6.3	0.3	0.5
Hs.168731	AA463460	811779	0.75	1.67	2.2	0.4	0.8	6.3	1.4	6.3	0.6	0.6
Hs.75950	AA487215	841308	9.45	28.45	3	6.2	0.7	2.8	2.4	6.2	0.4	0.3
Hs.20185	AA424744	768199	0.57	1.18	2.1	0.5	6.2	0.8	0.8	6.2	0.6	0.7
Hs.29871	AA015658	360403	29.38	59.22	2	0.9	0.3	6.2	0.6	6.2	0.4	2.1
Hs.98321	AA455585	813508	0.51	1.43	2.8	1.6	6.2	1.7	1.7	6.2	1.3	1.8
Hs.216260	AA449590	785701	10.07	32.48	3.2	6.2	2.7	1.4	2.6	6.2	1.4	1.8
Hs.173737	AA630771	856420	37.22	107.36	2.9	2.5	1.3	1.7	6.1	6.1	1.6	2.5
Hs.128653	R14908	30114	0.79	2.42	3.1	6.1	0.6	2.4	3	6.1	0.8	0.7
Hs.16179	R01279	123724	0.88	2.35	2.7	6.1	1.4	2	1.1	6.1	1	0.7
Hs.116774	H68952	212078	0.74	2.32	3.1	6.1	2.6	1.8	2	6.1	1	0.9
Hs.94090	N58065	247466	0.73	2.4	3.3	6.1	1.7	2.9	2.5	6.1	1.7	2.7
Hs.334	AA001222	362279	0.15	0.41	2.8	1.1	6.1	1.9	2.1	6.1	1.6	0.8
Hs.32838	H38864	190717	0.31	0.87	2.8	6.1	0.8	2.6	1.5	6.1	1.6	2.3
Hs.37331	W91879	415229	7.3	17.15	2.4	0.6	0.8	6.1	2	6.1	1.3	1.4

Table 1

Hs.218113	AA625765	745397	0.1	0.23	2.3	0	6.1	1.9	1.2	6.1	1.7	0.1
Hs.117848	H79534	239611	1.82	3.41	1.9	0.4	0.4	6.1	0.6	6.1	2.2	0.2
Hs.214279	R78498	144902	4.12	11.86	2.9	6	1.3	1.7	2.4	6	1	2.6
Hs.9030	AA700322	460666	1.46	2.99	2	0.9	6	0.6	0.6	6	0.9	1.3
Hs.88974	AA463492	796984	1.57	4.55	2.9	6	1.9	2.4	1.2	6	0.6	0.6
Hs.72092	AA256849	682052	1.04	2.53	2.4	1.1	6	1.3	1.2	6	0.9	2.2
Hs.180378	AA490352	823755	5.98	16.99	2.8	1.9	1.3	6	2.2	6	1	1.4
Hs.217474	AA126821	490551	0.61	1.28	2.1	0.8	6	0.9	0.7	6	1.1	0.9
Hs.47334	N51752	281761	0.37	0.72	2	0.5	6	0.8	0.6	6	0.4	1.2
Hs.112242	AA620995	1056172	126.24	281.22	2.2	0.2	6	0.6	2.1	6	1.6	0.9
Hs.124019	H96416	256739	0.77	1.72	2.2	6	0.9	1.2	0.9	6	0.4	1.1
Hs.100194	T49651	67759	15.4	40.51	2.6	6	1.9	1.7	0.9	6	0.4	0.5
Hs.149923	W90224	417867	2.17	6.1	2.8	2.4	1.6	5.9	1.3	5.9	1.8	2.4
Hs.217955	N36232	272748	13.42	41.97	3.1	2.3	1.3	5.9	3	5.9	0.3	0.9
Hs.48876	AA679352	866882	0.12	0.3	2.5	1.3	0.2	5.9	2.5	5.9	2.2	1.1
Hs.122576	AA055768	510576	15.85	36.32	2.3	0.3	1	2	5.9	5.9	1.6	0.4
Hs.57209	AA630084	854678	6.17	15.78	2.6	5.9	0.9	1.5	1.9	5.9	0.3	0.4
Hs.215585	R9355	197657	0.75	2.47	3.3	5.9	2.3	2.6	2.5	5.9	0.9	1.5
Hs.120906	AA035703	360025	0.1	0.28	2.8	5.9	2	2.2	1.2	5.9	0.7	1.1
Hs.97681	R95731	198982	0.7	2.06	3	5.8	2.3	2.1	1.6	5.8	1.6	1.6
Hs.70499	AA406311	754582	1.43	4.09	2.9	5.8	1.6	2.5	1.5	5.8	0.6	0.6
Hs.75746	AA455235	814798	6.76	17.14	2.5	1	2.8	0.6	5.8	5.8	0.7	1.6
Hs.194061	AA885210	1468722	0.1	0.17	1.7	0	5.8	0.3	0.7	5.8	0.2	0
Hs.142019	W81668	347498	5.55	13.63	2.5	0.4	2.6	1	5.8	5.8	0.5	1
Hs.58348	W94063	357544	6.13	11.45	1.9	5.8	0.6	0.4	0.6	5.8	1.6	0.6
Hs.750	AA418811	767851	1.05	3	2.9	5.8	0.8	2.2	2.5	5.8	1	0.9
Hs.96607	AA405008	712360	1.6	4.35	2.7	1.9	0.9	5.8	2.2	5.8	1.1	2.6
Hs.8939	AA708798	506658	1.65	4.45	2.7	1.2	5.8	2.2	1.6	5.8	1	2
Hs.170116	W73587	344134	0.1	0.21	2.1	2.5	0	5.8	0.3	5.8	0.8	0.2
Hs.97641	AA398482	726989	0.79	2.04	2.6	5.8	0.9	1.6	2	5.8	1	0.9
Hs.37682	AA481944	756372	0.99	2.61	2.6	5.7	1.6	1.8	1.4	5.7	1.5	1.1
Hs.217608	R90930	167201	0.1	0.22	2.2	5.7	0.4	1.9	0.8	5.7	2.2	1.8
Hs.219067	N80114	290072	1.85	5.27	2.9	2.2	2	5.7	1.5	5.7	1.3	1.4
Hs.68877	AA876021	1161830	0.1	0.19	1.9	0.4	0.3	1.2	5.7	5.7	0.2	1.1
Hs.50955	N81093	300512	0.38	1.1	2.9	2.1	1.7	2.1	5.7	5.7	1.3	1

Table 1

Hs.101840	AI791364	1472336	2.75	8.42	3.1	3	1	5.7	2.6	5.7	0.8	1.3
Hs.98007	AA496085	743058	0.58	1.11	1.9	0.7	5.7	0.4	0.8	5.7	0.9	0.8
Hs.26745	N46299	273625	4.16	12.33	3	5.7	1.1	2.7	2.5	5.7	0.8	1.9
Hs.83617	W90002	417307	0.6	1.59	2.7	5.7	1.7	1.7	1.6	5.7	1.1	1.2
Hs.53875	T63324	80109	10.8	26.03	2.4	5.6	1.3	1.7	1.1	5.6	0.4	0.4
Hs.2664	N42801	272183	0.1	0.26	2.6	2.2	0.9	5.6	1.7	5.6	1	2.7
Hs.100595	AA489200	825011	0.26	0.68	2.7	0.5	2.3	5.6	2.1	5.6	1.5	0.7
Hs.65248	R54541	39189	0.81	1.44	1.8	5.6	0.4	0.4	0.8	5.6	0.6	0.4
Hs.106149	R78465	144855	0.94	2.51	2.7	5.6	1.8	2.6	0.7	5.6	0.7	0.9
Hs.850	R52597	39884	0.1	0.25	2.5	5.5	1.2	1.6	1.7	5.5	1.4	0.9
Hs.213944	AA448760	786076	1.88	5.51	2.9	5.5	1.7	1.9	2.6	5.5	0.6	2.1
Hs.220006	H54660	203183	1.81	4.28	2.4	5.5	1.3	1.6	1	5.5	0.8	0.7
Hs.171862	W72748	346117	3.16	9.24	2.9	2	1.8	5.5	2.4	5.5	1.1	0.6
Hs.119529	AA630449	854644	37.48	121.9	3.3	5.5	2	2.8	2.6	5.5	1.1	1.6
Hs.79248	H16746	50214	0.66	1.73	2.6	5.4	1.5	2.3	1.2	5.4	0.4	0.5
Hs.218916	AA045404	487082	1.35	3.85	2.9	2.2	5.4	2.1	1.6	5.4	1.2	1.3
Hs.1706	AA291577	724588	3.63	9.54	2.6	1.9	5.4	1.4	1.8	5.4	0.5	2.4
Hs.190408	AA757732	396111	1.05	2.55	2.4	5.4	0.8	2.1	1.4	5.4	0.7	2.2
Hs.126580	AA677863	430677	0.77	2.06	2.7	5.4	1.3	2.9	1.1	5.4	1.4	0.6
Hs.124275	R51382	39219	0.89	2.22	2.5	0.3	1.4	5.4	2.9	5.4	1.5	0.2
Hs.154159	AA290737	713922	4.97	15.63	3.1	5.4	3	1.8	2.5	5.4	0.6	0.4
Hs.89546	H39560	186132	0.1	0.2	2	1.7	0.7	5.4	0.3	5.4	0.4	0.2
Hs.36727	AA412229	726439	0.1	0.16	1.6	0.2	5.4	0.2	0.8	5.4	0.7	0.9
Hs.177700	W37280	321972	0.72	1.92	2.7	1.4	1.1	5.4	2.8	5.4	1.7	1.7
Hs.219001	AA036697	365991	0.42	1.01	2.4	2.1	0.9	5.4	1.2	5.4	2	2.9
Hs.3321	R55185	154654	0.49	1.11	2.3	0.3	5.4	1.2	2.2	5.4	1.9	2.2
Hs.104893	AA479920	772913	2.68	7.57	2.8	2.2	2.1	5.4	1.6	5.4	0.9	1.9
Hs.9615	AA877166	1473274	0.55	1.5	2.7	2.3	5.3	1.4	2	5.3	1.2	1.1
Hs.219626	AA425352	768638	3.93	9.77	2.5	5.3	0.9	2.6	1.1	5.3	0.5	0.7
Hs.9825	AA490521	824510	0.1	0.22	2.2	0.1	5.3	1.8	1.4	5.3	0.2	0.3
Hs.16530	AA425047	768497	0.67	1.47	2.2	5.3	1.2	1.3	1	5.3	1.2	1.7
Hs.78864	AA634109	868380	5.13	12.07	2.4	5.3	1.3	1.9	0.9	5.3	0.4	0.6
Hs.117261	AA682521	431215	0.57	1.61	2.8	1.3	1.8	2.9	5.3	5.3	1.4	0.8
Hs.12150	N79745	300276	1.32	2.97	2.2	5.3	1.1	1.6	1	5.3	0.8	0.8
Hs.84521	N50375	280465	4.57	14.58	3.2	2.5	2.2	5.3	2.8	5.3	1.7	1.1

Table 1

Hs.1861	N74236	296880	1.13	2.87	2.5	5.3	1	2.8	1.1	5.3	1.1	0.6
Hs.82911	AA504327	825442	6.81	19.09	2.8	1.2	2.5	2.2	5.3	5.3	1.3	2.4
Hs.53875	T63324	80109	10.87	25.71	2.4	5.3	1.5	1.7	1	5.3	0.5	0.3
Hs.181368	AA621761	1030855	7.96	16.02	2	0.3	5.3	0.6	1.9	5.3	2.1	1
Hs.35981	R98592	201334	0.39	1.08	2.8	1.9	1.3	5.3	2.7	5.3	1.3	2.2
Hs.82042	N23756	268005	0.27	0.75	2.8	1.3	2.9	5.3	1.7	5.3	1.4	1.3
Hs.196176	AA425861	769537	5.67	14.69	2.6	2.2	0.7	2.2	5.3	5.3	1.5	1.4
Hs.153227	AA429076	769712	0.63	1.55	2.5	5.3	0.8	2.2	1.6	5.3	0.7	0.9
Hs.98006	AA496083	743054	0.34	0.66	2	0.7	5.2	0.9	1	5.2	1	1.2
Hs.178381	AA481269	815242	2.87	8.69	3	5.2	1.1	2.9	2.8	5.2	1.8	1.3
Hs.80645	AA478043	740476	0.94	2.05	2.2	5.2	1.7	1.5	0.3	5.2	1.2	0.7
Hs.124058	N32226	258649	0.33	0.86	2.6	5.2	1.1	2.5	1.5	5.2	0.7	1.1
Hs.70993	AA127419	565624	1.1	2.91	2.6	1.6	1.1	5.2	2.6	5.2	0.7	0.9
Hs.41241	W37573	321902	1.64	5.3	3.2	2.8	5.2	2.1	2.9	5.2	1	2.3
Hs.32135	W07043	300038	0.36	0.94	2.6	2.2	0.8	5.2	2.2	5.2	1.5	1.2
Hs.42532	N35469	272140	0.1	0.2	2	1	0.4	5.2	1.3	5.2	0	0.1
Hs.29444	W47230	324674	1.18	3.43	2.9	5.2	2.2	2.1	2.2	5.2	1	2.2
Hs.37331	H10098	46827	8.46	18.96	2.2	0.8	0.6	5.2	2.4	5.2	1.2	1.3
Hs.97594	AA398246	726661	0.33	0.77	2.3	0.8	5.2	1.5	1.9	5.2	1.5	0.7
Hs.55606	AA454174	795319	0.81	2.12	2.6	2.1	1.7	5.2	1.6	5.2	1.1	0.9
Hs.177921	T63201	79743	11.14	32.17	2.9	2.8	1	2.6	5.2	5.2	2.1	2.8
Hs.22581	AA425411	773083	2.72	8.05	3	2.6	1.6	5.1	2.4	5.1	1.4	1.6
Hs.47170	N51002	281243	0.22	0.55	2.5	1	1.4	5.1	2.3	5.1	1	2.2
Hs.110837	AA678178	430834	3.47	10.39	3	2.8	1.7	5.1	2.4	5.1	1.1	2
Hs.182191	AA621725	1035518	0.93	2.74	2.9	1.9	1.8	5.1	2.9	5.1	1.2	1.9
Hs.30031	W81576	347742	0.28	0.69	2.4	5.1	0.5	2.7	1.4	5.1	1.1	1.2
Hs.74626	N72918	245853	0.84	2.37	2.8	5.1	1.7	2.4	2	5.1	1.6	1.1
Hs.597	H22856	51702	19.17	47.71	2.5	1.7	0.7	5.1	2.5	5.1	1.2	1.2
Hs.168103	AA598470	897767	5.2	14.73	2.8	2.5	1.4	5.1	2.3	5.1	2	2.7
Hs.85944	AA194830	664969	1.23	3.25	2.7	1.6	1	2.9	5.1	5.1	2	1.5
Hs.131924	T87010	115277	1.3	2.95	2.3	5.1	1.2	1.9	1	5.1	0.7	0.7
Hs.85146	H96235	260303	2.64	7.02	2.7	1.3	5.1	1.7	2.5	5.1	1.7	3
Hs.15085	H42722	183417	0.57	1.57	2.7	5.1	1.7	2.7	1.5	5.1	1	1
Hs.105636	N52018	282433	1.47	3.82	2.6	1.1	1.5	5.1	2.7	5.1	0.5	0.6
Hs.180201	AA448126	782719	2.96	9.31	3.1	5.1	3	2.2	2.4	5.1	1	1.5

Table 1

Hs.99480	AA485454	811069	1.09	2.61	2.4	1.1	1	5	2.4	5	1.5	0.6
Hs.105700	AA486838	841282	2.46	5.95	2.4	5	0.9	2	1.7	5	1.1	0.4
Hs.204132	R95778	199258	0.93	2.3	2.5	5	0.9	2.4	1.6	5	0.7	1.2
Hs.2442	H59230	204257	5.02	14.37	2.9	5	1.8	1.9	2.7	5	1.5	2.2
Hs.29899	N91582	303043	2.77	7.45	2.7	2	1.7	5	2.1	5	0.9	1
Hs.93082	AA890136	1461048	0.26	0.59	2.3	0.8	1.1	5	2.1	5	0.8	1
Hs.150926	R38619	22883	1.69	4.45	2.6	2	1	5	2.6	5	0.7	0.8
Hs.11864	AA496999	897548	2.11	5.71	2.7	1.7	1.5	5	2.6	5	0.7	2.6
Hs.93740	N30205	258860	14.94	41.09	2.7	5	1.3	2.5	2.2	5	1.9	0.7
Hs.218240	AA404269	758309	1.24	2.79	2.3	2.1	0.8	5	1.1	5	0.7	0.5
Hs.78902	T66814	66315	11.4	19.27	1.7	1	2.9	2	0.9	2.9	3.4	3.6
Hs.79353	W33012	321708	1.41	2.82	2	1.2	1.6	2.7	2.4	2.7	3.2	3.8
Hs.220258	W52085	325526	3.32	5.64	1.7	0.9	2.6	1.4	1.9	2.6	4.5	6.5
Hs.111323	W38890	305271	0.16	0.26	1.7	1.7	1.1	2.4	1.5	2.4	3.1	5.5
Hs.214440	R96240	197913	3.25	5.3	1.6	1	1.9	1.3	2.3	2.3	4	4
Hs.104859	T66936	66406	0.5	0.91	1.8	1.6	1.5	1.9	2.2	2.2	3.6	3
Hs.182825	AA625634	877835	65.8	81.36	1.2	0.6	2	1.5	0.9	2	3.5	7.4
Hs.82906	AA598776	898062	0.94	1.48	1.6	1.3	1.9	1.5	1.6	1.9	3.7	4
Hs.47567	N52876	283619	0.17	0.25	1.4	1.5	0.8	1.6	1.8	1.8	3.6	3.1
Hs.161107	N40180	276387	0.51	0.6	1.2	0.3	1.8	1	1.6	1.8	3.8	4
Hs.1846	T80132	24415	9.66	12.36	1.3	0.6	1.2	1.8	1.6	1.8	3.3	6.3
Hs.48094	N57906	247177	1.29	1.72	1.3	0.6	1.6	1.6	1.5	1.6	3.2	6.8
Hs.3094	T83550	111120	2.3	4.59	2	1.3	1.5	3	2.2	3	1.3	3.5
Hs.771	H91776	241705	5.63	8.16	1.4	1.1	1.6	0.1	3	3	1.2	5.4
Hs.177331	N30557	257170	9.91	17.93	1.8	0.7	2	1.5	3	3	3	1.8
Hs.71059	AA127221	502706	0.78	1.86	2.4	3	2	1.5	3	3	2.8	4.3
Hs.119643	AA026921	470261	2.87	5.64	2	1.2	1.4	3	2.2	3	3	1.7
Hs.79024	AA504272	825411	5.62	6.98	1.2	0.4	3	0.6	1.1	3	1.7	4.8
Hs.146957	AA435950	730559	1.22	2.33	1.9	1	2.8	0.9	3	3	0.9	3.5
Hs.77171	AA283961	700721	1.16	2.11	1.8	1.1	2.9	1.8	1.4	2.9	2.6	8.5
Hs.7114	R45321	35642	2	4.08	2	1.3	1.4	2.5	2.9	2.9	3.1	0.8
Hs.162913	T99043	122752	3.04	4.94	1.6	0.6	1.9	1.1	2.9	2.9	4.9	1.3
Hs.72085	AA032205	375661	5.52	13.84	2.5	2.9	1.6	2.8	2.7	2.9	1.3	3.4
Hs.173515	H81009	241003	0.98	1.6	1.6	0.8	1.9	2.9	0.9	2.9	0.7	5.8
Hs.18573	W78754	415388	2.46	4.13	1.7	1	2.9	2.4	0.4	2.9	2.7	6.4

Table 1

Hs.110945	W99328	357892	0.21	0.4	1.9	2.1	1.8	2.9	0.9	2.9	0.7	7.6
Hs.109113	AA464612	812988	6.15	15.27	2.5	2.7	1.7	2.9	2.6	2.9	1.7	3
Hs.55189	AA428421	770997	3.34	4.4	1.3	0.9	2.9	0.6	1	2.9	3.9	1.2
Hs.214189	AA461486	796663	11.44	19.74	1.7	1.1	1.3	1.6	2.9	2.9	3.3	1.8
Hs.104111	AA496784	897636	2.41	4.35	1.8	2.9	0.8	1.5	2	2.9	3.7	2.5
Hs.43334	AA233646	666180	1.56	2.72	1.7	0.7	1.7	1.7	2.9	2.9	3.3	2
Hs.218561	W88587	417473	2.34	4.55	1.9	2.1	0.7	2	2.9	2.9	0.7	4.4
Hs.17883	AA465723	814989	6.16	13.61	2.2	2.2	2.2	1.5	2.9	2.9	0.7	4
Hs.218213	R54035	40010	0.1	0.08	0.8	2.9	0	0	0.3	2.9	12	0.3
Hs.65648	AA448402	781366	33.28	75.32	2.3	2.4	2.5	1.3	2.8	2.8	1.8	3.8
Hs.25245	R37817	137655	0.99	2.41	2.4	2.8	1.9	2.6	2.4	2.8	1.1	3.3
Hs.220303	AA130547	586706	303.29	628.24	2.1	0.7	2.8	2	2.8	2.8	1	3.7
Hs.118600	R48477	153838	0.1	0.13	1.3	0.1	1	2.8	1.3	2.8	3.2	0.1
Hs.43866	AA452752	788507	2.09	5.49	2.6	2.8	2.3	2.6	2.8	2.8	2.2	3.2
Hs.189713	R16069	66420	0.68	1.2	1.8	1.5	2.8	1.1	1.6	2.8	8.1	2
Hs.219693	AA489664	824332	2.45	3.68	1.5	1	1.2	2.8	1	2.8	1.5	3.6
Hs.213549	AA456585	809394	0.56	0.88	1.6	1	1.2	2.8	1.3	2.8	1.7	3.1
Hs.77602	AA406449	753447	2.2	5.43	2.5	2.6	1.9	2.6	2.8	2.8	1.3	3.4
Hs.183232	AA454008	795263	1.64	2.97	1.8	1	1.6	2.8	1.9	2.8	2	5.1
Hs.8765	AA464704	810229	0.7	1.3	1.9	1.1	2.8	1.4	2.1	2.8	2.1	3.3
Hs.77318	AA424564	767180	2.25	4.27	1.9	0.7	2.7	1.5	2.8	2.8	1.8	3.6
Hs.25723	AA456077	813499	3.81	8.43	2.2	2.8	2.1	2.1	1.9	2.8	1.9	4.5
Hs.17719	N54672	283173	9.49	15.35	1.6	1.5	1.2	2.8	1	2.8	2.2	3.4
Hs.23291	N33063	270385	1.74	3.19	1.8	0.9	2.8	1.7	2	2.8	3.3	2.1
Hs.790	AA495935	768443	14.48	22.34	1.5	0.4	0.7	2.8	2.3	2.8	1.7	3.9
Hs.184045	AA401236	758329	2.89	5.73	2	2.1	0.5	2.7	2.6	2.7	0.9	3.7
Hs.145024	W24279	306893	2.9	5.25	1.8	1.3	2.1	2.7	1.1	2.7	0.8	3.9
Hs.196432	AA401111	741474	4.49	9.06	2	2.7	1.3	2	2	2.7	2.3	3.8
Hs.77494	R07560	125722	2.81	5.24	1.9	2.7	1.4	1.3	2	2.7	2.5	4.2
Hs.117176	AA040741	486186	4.7	7.68	1.6	0.9	2.7	1.6	1.3	2.7	1.4	3.9
Hs.219995	AA151486	503097	6.28	12.81	2	1.6	1.7	2.1	2.7	2.7	1.7	4
Hs.76927	AA457118	810452	1.18	2.48	2.1	1.7	1.8	2.7	2.2	2.7	1.5	3.2
Hs.7579	AA775865	878550	3.11	5.87	1.9	1.1	1.9	2.7	1.9	2.7	2.6	3.7
Hs.83918	R01732	124127	1.39	2.34	1.7	1.7	2.7	1	1.4	2.7	4.3	2
Hs.3487	AA425553	773324	0.99	1.73	1.7	0.8	2.7	1.6	1.9	2.7	1.4	4.3

Table 1

Hs.217946	R74253	143306	3.45	6.67	1.9	2.7	0.7	2.2	2.2	2.7	2	3.6
Hs.85280	AA877255	1159963	0.79	1.23	1.6	0.5	2.7	1.2	2	2.7	1.2	3.9
Hs.139327	AA496801	897649	0.19	0.3	1.6	1.5	0.7	2.7	1.5	2.7	25.7	2
Hs.82171	H15094	49249	2.16	4.05	1.9	2.7	1	2	1.9	2.7	0.9	3.8
Hs.107527	R66438	41869	0.29	0.47	1.6	0.4	2.6	2.7	0.9	2.7	1.4	6.1
Hs.24138	R26919	132828	0.3	0.64	2.1	0.7	2.6	2.6	2.6	2.6	0.8	4.6
Hs.75393	W45098	322914	7.37	14.89	2	2.1	1.2	2.1	2.6	2.6	1.4	3.1
Hs.16781	T91039	112488	3.89	5.66	1.5	0.6	1.4	1.2	2.6	2.6	3.8	1.4
Hs.55953	W46575	324111	3.82	5.4	1.4	0.7	0.9	1.4	2.6	2.6	3.2	1.7
Hs.23044	W00895	296155	0.9	1.87	2.1	1.7	2.6	1.8	2.1	2.6	1.5	4.1
Hs.202374	N52938	283688	3.31	4.96	1.5	0.8	1.5	1.1	2.6	2.6	3.7	1.2
Hs.20776	AA459645	810979	0.5	0.64	1.3	0.6	2.6	0.7	1.2	2.6	1	3.3
Hs.112804	AA610016	1032015	1.21	2.26	1.9	1.5	2.6	1.4	1.9	2.6	3.7	0.7
Hs.77917	N39937	257445	3.74	7.47	2	1	2.6	1.8	2.6	2.6	1.8	3.8
Hs.191399	AA609365	743445	1.93	3.17	1.6	1	1.9	1.1	2.6	2.6	3.2	1
Hs.187677	AA461084	796166	5.69	8.06	1.4	0.5	1.7	0.9	2.6	2.6	3.2	0.8
Hs.44901	N38960	243347	3.67	7.09	1.9	1.3	2.6	1.8	2	2.6	1.8	4.9
Hs.208861	N24046	269303	10.24	16.7	1.6	0.7	1.8	1.5	2.6	2.6	3.4	1.8
Hs.214015	N30976	266146	0.98	1.59	1.6	1.9	0.8	1.2	2.6	2.6	1.1	3.9
Hs.220207	R26803	132594	0.3	0.46	1.5	1	1	1.5	2.6	2.6	1.9	3.6
Hs.34012	H48122	193736	2.67	4.57	1.7	0.9	1.8	1.6	2.6	2.6	3.1	1.2
Hs.220317	AA448967	785778	4.38	8.07	1.8	1.4	1.2	2.3	2.6	2.6	1.4	3.2
Hs.166456	AA010605	430314	0.2	0.32	1.6	1.1	1.5	2.6	1.4	2.6	1.1	4.9
Hs.93743	N30713	257414	4.91	7.61	1.5	0.8	1.3	1.5	2.6	2.6	3.9	1.7
Hs.15061	T90074	110582	0.94	1.27	1.4	0.6	2.6	0.9	1.3	2.6	1.3	7.8
Hs.198563	H51100	193883	2.79	5.83	2.1	1.8	1.9	2.2	2.5	2.5	3.5	1.9
Hs.93183	AA410429	753418	0.84	1.54	1.8	2.5	1.4	1.4	2	2.5	1	4.1
Hs.59939	AA002258	427778	5.6	8.23	1.5	0.7	1.5	1.2	2.5	2.5	3.3	1.1
Hs.75486	AA101861	489805	0.1	0.19	1.9	1.7	1.6	2.5	1.8	2.5	1.1	3.4
Hs.207246	N64024	293975	1.84	2.6	1.4	0.6	1.3	1.2	2.5	2.5	4	1.1
Hs.157124	N63940	293924	0.6	1.1	1.8	1.1	2.5	1.3	2.4	2.5	0.3	5.1
Hs.40319	H81938	239943	5.28	7.51	1.4	0.6	1.3	1.2	2.5	2.5	5.7	1.1
Hs.215413	T70109	80915	2.12	3.25	1.5	0.5	1.7	1.4	2.5	2.5	2.9	3.4
Hs.161472	N54925	244659	8.12	12.29	1.5	0.7	1.6	1.3	2.5	2.5	3.1	1
Hs.182490	AA875893	1325615	3.3	6.92	2.1	2.4	1.8	2.5	1.8	2.5	0.8	3.1

Table 1

Hs.13852	T99617	123354	0.48	0.68	1.4	0.7	2.5	1.3	1.2	2.5	1.2	7.6
Hs.76800	H68509	212021	0.65	1.01	1.6	1.7	0.8	2.5	1.3	2.5	0.9	3.2
Hs.181243	AA600217	949971	12.31	20.91	1.7	1.2	2.5	1.4	1.7	2.5	1.6	3.1
Hs.40968	H86876	220372	1.47	1.63	1.1	0.5	2.5	0.9	0.5	2.5	0.6	3.1
Hs.5862	N63529	278168	0.43	0.74	1.7	1	1.2	2.1	2.5	2.5	4.9	2
Hs.25277	AA458491	809620	0.15	0.3	1.9	1	2.1	2.5	2.1	2.5	2.2	4
Hs.117546	R64004	139681	0.49	0.74	1.5	0.8	1	2.5	1.7	2.5	1.1	4.9
Hs.114541	N57659	246552	1.81	2.73	1.5	0.6	1.7	1.2	2.5	2.5	4	1.4
Hs.50272	N73448	291633	2.39	2.95	1.2	0.3	2.5	0.9	1.2	2.5	4	0.4
Hs.24131	N24281	261609	3.25	5.05	1.6	0.8	1.5	1.4	2.5	2.5	3.1	1.1
Hs.48810	N63516	278144	0.5	0.67	1.3	0.6	1.3	0.9	2.5	2.5	3.7	1
Hs.218385	N64780	284583	0.65	1.16	1.8	0.9	2.1	1.7	2.5	2.5	1.6	3.7
Hs.79	AA402915	741988	1.25	1.86	1.5	0.7	2.5	1.1	1.8	2.5	0.8	5.1
Hs.8724	AA521346	826135	0.32	0.55	1.7	1	1.8	1.8	2.5	2.5	1	3.8
Hs.91958	N57554	279972	2.5	5.06	2	2.5	1.5	2.2	2	2.5	1.9	3.4
Hs.112603	AA608852	1048671	0.88	1.44	1.6	2.5	1.1	1.4	1.6	2.5	1.2	3
Hs.57932	W68265	342497	1.17	1.82	1.6	1.5	1.2	1	2.5	2.5	1.3	4.7
Hs.181695	R56604	41074	0.1	0.19	1.9	1	2	2.1	2.5	2.5	3.9	1
Hs.38344	H65261	209518	0.69	0.96	1.4	0.4	2.4	2.3	0.4	2.4	0.6	6.3
Hs.101191	R45367	35769	1.99	3.11	1.6	0.6	1.7	1.5	2.4	2.4	3.2	1.3
Hs.208819	T96986	120273	1.87	2.63	1.4	0.7	1.5	1	2.4	2.4	3.4	1.1
Hs.6877	H12254	48167	1.95	3.92	2	2.2	1.3	2.1	2.4	2.4	1.4	3.3
Hs.216749	AA461403	796155	9.4	14.24	1.5	0.5	1.9	1.3	2.4	2.4	3.5	1.1
Hs.48487	N62213	290182	0.14	0.21	1.5	0.7	1	2.4	1.9	2.4	3.9	0.5
Hs.200451	N57865	247110	9.25	13.33	1.4	0.7	1.6	1.1	2.4	2.4	3	1.1
Hs.45027	N39577	277039	2.34	3.29	1.4	0.7	1.5	1	2.4	2.4	4.4	1.3
Hs.80506	AA122272	490772	3.19	5.57	1.7	1.1	2.4	1.8	1.8	2.4	0.9	3.1
Hs.51233	T81891	110167	7.86	10.72	1.4	0.7	1.1	1.3	2.4	2.4	3.2	1.4
Hs.184938	AA699390	432581	7.12	11.58	1.6	0.4	2.4	1.7	2.1	2.4	4.1	1.1
Hs.208288	H77641	214233	17.43	24.99	1.4	0.7	1.4	1.3	2.4	2.4	3.3	1.3
Hs.56043	AA479913	772918	1.77	3.52	2	2	2.4	1.8	1.8	2.4	1.4	3.8
Hs.219976	H73265	232658	0.97	2.18	2.2	2.1	2.2	2.4	2.4	2.4	1.9	3.1
Hs.111632	AA176220	595761	29.36	44.68	1.5	0.4	2.4	2	1.4	2.4	1.7	3.4
Hs.69854	H62894	208401	0.46	0.92	2	2.2	1.7	1.8	2.4	2.4	1.3	3.2
Hs.23099	N33054	270365	7.27	10.85	1.5	0.7	1.4	1.4	2.4	2.4	3	1.5

Table 1

Hs.198182	AA489608	897561	0.19	0.36	1.8	1.3	1.4	2.4	2.3	2.4	0.6	4.5
Hs.44664	N34933	276861	2.09	2.84	1.4	0.7	1.3	1.1	2.4	2.4	3.4	1
Hs.206297	R34725	37310	2.72	4.86	1.8	0.8	2.4	1.9	2.1	2.4	3	1.8
Hs.112936	AA621031	1056203	0.13	0.21	1.6	1.2	1.8	0.9	2.3	2.3	2	3.2
Hs.100909	R19773	35058	8.09	10.17	1.3	1.3	2.3	0.7	0.7	2.3	1.5	4.2
Hs.97413	AA449332	785699	0.32	0.46	1.4	0.4	0.9	2.3	2.1	2.3	3.5	1.5
Hs.112698	AA609364	743441	2.14	2.64	1.2	0.5	1.1	1	2.3	2.3	3.3	0.7
Hs.128744	H60175	207562	0.12	0.21	1.7	1.3	1.9	1.2	2.3	2.3	0.6	4.3
Hs.182825	N24437	262864	64.04	104.54	1.6	0.6	1.4	2.3	2.2	2.3	2.5	5
Hs.431	AA608856	1048586	1.28	2.11	1.6	1	1.5	1.8	2.3	2.3	1.8	3.1
Hs.108332	AA431868	773617	5.8	9.17	1.6	1.1	2.3	1.5	1.3	2.3	1.4	3.1
Hs.174049	AA402011	727164	0.71	1.04	1.4	1.1	2.3	1.3	1.1	2.3	1	3.5
Hs.187247	AA437124	757365	8.52	11.6	1.4	0.6	1.7	0.9	2.3	2.3	3.4	1
Hs.44071	N56639	257919	2.18	4.49	2.1	2.3	1.7	2	2.3	2.3	3.1	2.2
Hs.43275	N22897	266697	1.1	1.99	1.8	1.4	2.3	1.9	1.6	2.3	1.5	3.2
Hs.161599	AA015663	360428	1.28	1.84	1.4	0.6	1.6	1.3	2.3	2.3	8.9	2.2
Hs.171483	AA022886	364436	0.81	1.11	1.4	1.2	2.3	0.7	1.3	2.3	0.9	5.6
Hs.144957	AA464237	810122	0.47	0.68	1.4	2.3	1.7	1.2	0.6	2.3	2	4.6
Hs.27424	AA402879	741841	1.1	1.62	1.5	1.1	2.3	1.2	1.4	2.3	1.6	3.9
Hs.60677	AA015959	360684	1.63	2.44	1.5	1	0.6	2	2.3	2.3	3	2.9
Hs.175392(85)		149760	0.13	0.18	1.4	2.3	0.9	1.2	1.3	2.3	0.7	3.7
Hs.16269	AA291513	724831	3.11	4.95	1.6	1	1.4	1.6	2.3	2.3	1.4	3.1
Hs.22166	H09600	46383	3.32	5.08	1.5	0.8	1.9	1.2	2.3	2.3	3.9	1.6
Hs.17646	T95650	120678	2.91	4.7	1.6	0.7	1.7	1.8	2.3	2.3	3.7	1.3
Hs.194603	R89224	195547	3.73	5.69	1.5	0.8	1.4	1.6	2.3	2.3	3.1	1.3
Hs.170052	N50675	280826	4.52	5.72	1.3	0.6	1.5	0.7	2.3	2.3	5	1.5
Hs.165126	N51325	283118	1.05	2.23	2.1	2.2	1.8	2.3	2.2	2.3	1.6	4.7
Hs.180295	R15922	53331	0.1	0.14	1.4	0.3	1.3	1.7	2.3	2.3	1.5	3.2
Hs.145008	H95038	243244	0.13	0.24	1.9	2.2	1.6	1.9	1.9	2.2	4	0.7
Hs.155299	H08119	45582	5.45	7.78	1.4	2.2	0.7	1.5	1.3	2.2	0.9	3.2
Hs.208305	N73571	296022	1.04	1.47	1.4	0.9	1.4	1.1	2.2	2.2	3.6	1.6
Hs.108495	N53352	283956	12.5	19.02	1.5	0.9	2.2	1	2	2.2	3.3	1.7
Hs.47927	N77229	245555	3.61	4.67	1.3	0.5	1.4	1.1	2.2	2.2	4.6	0.9
Hs.30928	AA456161	809466	0.22	0.37	1.7	1.1	2	2.2	1.3	2.2	1.7	3.8
Hs.102676	N52883	283633	3.47	4.57	1.3	0.8	1.1	1.2	2.2	2.2	3.9	1.4

Hs.85618	AA205722	646854	0.1	0.16	1.6	2.2	1.8	1.3	1.1	2.2	4	0.1
Hs.207701	W93407	415165	10.17	14.12	1.4	0.8	1.5	1.1	2.2	2.2	3.4	1.5
Hs.108854	H98963	261393	17.9	34.02	1.9	1.9	1.7	1.8	2.2	2.2	2.3	3.9
Hs.47464	N52337	284457	1.61	2.26	1.4	0.7	1.6	1.1	2.2	2.2	3.7	1
Hs.163295	T47541	71211	0.26	0.37	1.4	0.6	1.1	1.8	2.2	2.2	1.9	4.3
Hs.47094	AA404564	772373	8.78	12.67	1.4	0.9	1.4	1.3	2.2	2.2	3.5	1.9
Hs.12865	AA456303	813161	5.95	9.09	1.5	0.8	1.4	1.7	2.2	2.2	1.2	3.2
Hs.43266(85)		266823	6.64	8.48	1.3	0.3	1.6	1	2.2	2.2	3	1
Hs.218714	H23329	51879	4.16	6.85	1.6	1.2	1.5	1.7	2.2	2.2	3.4	1.1
Hs.6479	R40481	27817	0.14	0.14	1	0.2	0.8	0.8	2.2	2.2	1.1	5
Hs.139077	AA156235	505341	2.8	3.67	1.3	0.8	1.3	1	2.2	2.2	7.6	2.9
Hs.41045	H92853	231903	0.1	0.13	1.3	1.1	2.2	0.9	1.3	2.2	2.4	3.8
Hs.108973	R78591	144887	0.87	1.37	1.6	1.3	1.1	2.1	1.8	2.1	2.1	5.1
Hs.82085	W35256	327748	2.41	3.26	1.3	0.8	1.3	1.1	2.1	2.1	4.2	1.6
Hs.133207	AI734197	810964	12.85	15.32	1.2	0.4	1.1	1.1	2.1	2.1	3.1	1.1
Hs.12552	R51354	39204	3.96	5.48	1.4	1.1	1.2	1.1	2.1	2.1	3.1	1.7
Hs.207239	H97970	251406	1.11	1.26	1.1	0.6	0.9	1	2.1	2.1	3.8	0.9
Hs.171955	H95465	242578	0.75	1.1	1.5	1.1	1.3	1.4	2.1	2.1	3.2	2.3
Hs.75238	AA425120	756769	0.31	0.49	1.6	1.5	2.1	1.2	1.6	2.1	2	3.1
Hs.216861	R53889	138139	0.17	0.25	1.5	0.9	0.9	2.1	2	2.1	0.4	5.4
Hs.108771	H96673	251877	0.82	1.22	1.5	1	1.8	1.1	2.1	2.1	3.4	1
Hs.44402	N32907	259883	0.24	0.41	1.7	1.3	1.4	2.1	2.1	2.1	1.5	3.4
Hs.78200	AA460299	795746	1.29	1.92	1.5	0.9	1.5	1.5	2.1	2.1	1.7	4.5
Hs.109057	W74701	344764	0.19	0.24	1.3	0.4	0.8	2.1	1.9	2.1	3.4	1
Hs.106650	AA406580	753320	0.63	0.89	1.4	0.7	2	0.9	2.1	2.1	1.5	3.2
Hs.138809	N89812	305481	1.21	1.93	1.6	1	1.6	2.1	1.7	2.1	2.2	4.2
Hs.82689	AA598758	897690	11.43	19.34	1.7	1.3	2.1	1.6	1.8	2.1	1.9	3.6
Hs.75782	AA922691	1474328	1.49	2.09	1.4	1.1	1.6	0.9	2.1	2.1	1.5	3.3
Hs.215099	AA458622	813384	0.38	0.59	1.6	1.2	2.1	1.7	1.3	2.1	2.4	3.2
Hs.61164	AA453435	788213	2.84	4.43	1.6	1.1	1.8	1.2	2	2	3.2	2.1
Hs.153	W01501	294503	2.07	2.88	1.4	0.6	2	1.2	1.7	2	4	0.6
Hs.172674	AA293819	727192	10.42	15.12	1.5	1.7	1	1.1	2	2	1.2	3.1
Hs.184270	AA449037	785793	105.11	151.76	1.4	1.1	1.1	2	1.5	2	0.7	4
Hs.173887	AA454753	809806	0.95	1.18	1.2	0.7	1.3	1	2	2	3.1	1.4
Hs.186726	AA453675	813639	0.44	0.57	1.3	1.1	0.7	1.4	2	2	3	2.9

Table 1

Hs.166783	AA453287	795395	3.94	5.18	1.3	1	2	1	1.2	2	1	4.7
Hs.88474	AA454668	811927	2.2	3.04	1.4	0.9	1.8	0.7	2	2	1.2	3
Hs.214068	AA487213	841302	7.95	12.94	1.6	1.7	0.8	2	2	2	0.8	3.2
Hs.138524	R99092	201422	1.01	1.24	1.2	0.9	1.2	0.9	2	2	3.3	1.5
Hs.111960	AA478717	753596	0.65	0.91	1.4	0.9	1.3	1.4	2	2	3.2	1.9
Hs.82327	AA463458	811792	1.07	1.5	1.4	0.9	1.2	1.5	2	2	2	3.1
Hs.188994	W86445	416644	3.07	3.8	1.2	0.5	1.5	1	2	2	3	0.9
Hs.169982	N35038	271497	9	11.5	1.3	0.7	1.4	1.1	2	2	3.1	1.2
Hs.183241	R00283	123278	3.04	4.3	1.4	1.2	2	1.1	1.4	2	1.3	3.3
Hs.16762	N70059	297899	1.95	2.45	1.3	0.7	1.4	1	2	2	3.4	1.1
Hs.60243	AA007663	429447	1.39	1.87	1.4	0.6	1.8	1.1	2	2	3.3	1.2
Hs.190093	AA400262	742635	3.52	4.54	1.3	0.8	1.4	1	2	2	3.4	1.2
Hs.214799	AA454566	809517	4.43	7.97	1.8	1.7	1.9	2	1.6	2	1.6	3.2
Hs.203710	H06380	44303	2.03	2.58	1.3	0.7	1.1	1.3	2	2	1.7	4
Hs.219683	H69608	212620	0.33	0.52	1.6	1	1.5	1.9	1.8	1.9	3.5	1.2
Hs.78920	AA776294	453689	1.19	1.41	1.2	1.9	0.4	1.3	1.1	1.9	1.8	3.7
Hs.36012	AA010421	430286	0.14	0.21	1.5	1.7	1.3	1.9	1	1.9	2.4	4.3
Hs.43396	N23599	250868	1.93	2.49	1.3	0.9	1.1	1.2	1.9	1.9	4.8	1.9
Hs.219724	R09980	128738	0.66	1.02	1.5	0.9	1.9	1.9	1.4	1.9	3.1	1.7
Hs.10702	AA670330	878373	34.89	57.53	1.6	1.5	1.9	1.9	1.3	1.9	1.4	3
Hs.118176	N71015	294507	0.54	0.73	1.3	0.8	1.9	0.9	1.6	1.9	3.1	0.9
Hs.9899	AA757608	395633	4.69	7.01	1.5	1.9	1.2	1.8	1.1	1.9	1.1	3.2
Hs.192371	AA429944	781289	1.65	2.21	1.3	0.7	1.3	1.5	1.9	1.9	1.4	6.2
Hs.207250	N95322	308105	1.55	2.12	1.4	1	1	1.6	1.9	1.9	1.6	5.1
Hs.156066	AA120880	490991	2.19	2.71	1.2	0.7	1.3	1.1	1.9	1.9	3	1.2
Hs.14945	R52682	41843	2.33	2.86	1.2	0.5	1.5	1	1.9	1.9	3.2	1
Hs.9598	AA292019	714437	8.11	9.83	1.2	0.8	1.9	1	1.2	1.9	1.1	3.2
Hs.117272	AA682599	450819	2.74	3.78	1.4	0.6	1.9	1.2	1.9	1.9	3.1	1-
Hs.153978	W91888	415182	1.3	1.9	1.5	1	1.9	1.2	1.8	1.9	3.4	1
Hs.47750	N54061	247265	1.44	1.67	1.2	0.5	1.4	0.8	1.9	1.9	5.9	1.7
Hs.180859	AA454611	811606	11.01	16.06	1.5	1.5	1.9	1.1	1.3	1.9	0.7	3.7
Hs.110571	AA504354	825461	1.1	1.13	1	0.5	1.9	1.1	0.6	1.9	2.3	5.5
Hs.151777	W60015	341942	5.96	9.04	1.5	1.5	1.7	1.9	1	1.9	0.8	4.9
Hs.176220	R31413	135065	2.27	2.81	1.2	0.6	1.6	1.9	0.9	1.9	0.6	3.4
Hs.180686	R85213	180520	3.47	5.16	1.5	0.8	1.9	1.5	1.7	1.9	0.8	4.3

Table 1

Hs.105843	N33900	267495	1.46	2.21	1.5	0.7	1.9	1.7	1.7	1.9	3.2	1.2
Hs.102731	N62375	290566	1.87	2.08	1.1	0.6	1.1	0.8	1.9	1.9	3.2	1.1
Hs.178617	AA488884	824873	1.56	1.74	1.1	0.8	1.9	0.8	1	1.9	2	3.1
Hs.22672	R19337	33022	5.94	7.78	1.3	0.7	1.6	1	1.9	1.9	3.3	0.9
Hs.206833	W42450	323041	5.69	7.36	1.3	0.7	1.7	1	1.9	1.9	3	1.3
Hs.161578	W86875	416407	2.05	2.53	1.2	0.8	1.4	0.9	1.9	1.9	3.2	1.1
Hs.77597	AA629262	744047	0.48	0.68	1.4	1.3	1.9	1.3	1.2	1.9	1.7	3.2
Hs.203563	R53351	40139	9.1	12.09	1.3	0.5	1.7	1.2	1.9	1.9	3.2	1.1
Hs.3491	H73727	214565	21.01	28.5	1.4	1	1.3	1.9	1.3	1.9	3.1	2
Hs.93837	N46804	277186	0.1	0.14	1.4	1.3	1.9	1	1.4	1.9	0.7	4.3
Hs.49053	N64762	284545	1.17	1.77	1.5	1	1.9	1.7	1.5	1.9	1.6	4.6
Hs.74407	R45255	22918	2.68	3.43	1.3	0.8	1.4	1.1	1.9	1.9	1.1	4.4
Hs.38991	AA458884	810813	348.76	457.48	1.3	1.1	1.7	1.9	0.5	1.9	0.7	4.1
Hs.26255	R42714	32310	17.37	20.81	1.2	0.7	1.4	0.8	1.9	1.9	3.3	1.3
Hs.121593	W86335	415876	0.28	0.45	1.6	1.5	1.8	1.2	1.8	1.8	1.1	3.1
Hs.125051	W90693	418328	2.02	2.56	1.3	0.8	1.4	1.1	1.8	1.8	3.1	1.2
Hs.181390	AA053484	510002	0.2	0.3	1.5	1.5	1.3	1.8	1.4	1.8	1.2	4.5
Hs.54011	N49377	280387	0.79	1.1	1.4	1.4	1.2	1.2	1.8	1.8	3.1	0.6
Hs.23459	AA460310	795749	1	1.38	1.4	1.1	1.3	1.3	1.8	1.8	2	4.1
Hs.217686	N72265	291345	65.66	90.88	1.4	1.3	1.3	1.8	1.1	1.8	1	7
Hs.127683	W81214	347472	1.74	1.98	1.1	0.6	1.3	0.9	1.8	1.8	4.2	1.5
Hs.43773	AA497123	823577	1.04	1.08	1	0.7	1.8	1.1	0.5	1.8	1	3.4
Hs.124147	H90767	240509	1.89	2.46	1.3	0.7	1.4	1.2	1.8	1.8	4	1.3
Hs.36927	AA485036	815781	5.21	6.59	1.3	1.7	1.8	1	0.5	1.8	1	3.2
Hs.28393	AA434497	770869	1.4	1.7	1.2	1	1.8	1	1.1	1.8	0.5	3.1
Hs.183160	AA031284	470379	1.27	1.45	1.1	0.4	1.4	1.8	1	1.8	1.9	7.1
Hs.14018	AA446980	784214	5.14	7.57	1.5	1.3	1.8	1.2	1.6	1.8	0.8	3.3
Hs.7967	AA777493	449126	0.67	0.74	1.1	0.7	1.8	0.7	1.2	1.8	1.3	5.1
Hs.75323	N48458	276519	0.43	0.55	1.3	1.8	0.8	1.1	1.4	1.8	1.8	3
Hs.215114	N57723	246661	0.99	1.49	1.5	1.8	1.3	1.4	1.6	1.8	2.1	3.1
Hs.7879	T97868	121948	2.5	3.63	1.4	1.2	1.1	1.8	1.7	1.8	3.4	2.9
Hs.219776	H14057	163841	1.24	1.91	1.5	1.7	1.1	1.8	1.6	1.8	0.9	3.4
Hs.112904	AA620783	1049321	0.1	0.09	0.9	0.2	1.8	0.4	1.2	1.8	0.3	3.3
Hs.155342	AA496409	755301	0.1	0.11	1.1	1.8	0.5	1.3	0.9	1.8	0	3.1
Hs.205465	R43250	31904	1	1.12	1.1	0.6	1.2	1	1.7	1.7	3.2	0.7

Table 1

Hs.182982	AA456818	815550	1.59	1.84	1.2	0.8	1.7	1	1.1	1.7	3.2	2.4
Hs.112879	AA620669	1049168	0.79	1.12	1.4	1.4	1.1	1.7	1.4	1.7	2.4	4.9
Hs.178379	AA455554	813444	1.31	1.91	1.5	1.3	1.7	1.3	1.5	1.7	0.9	4.7
Hs.42212	H96630	251565	2.14	2.23	1	0.5	1.2	0.7	1.7	1.7	3.7	0.8
Hs.117729	H44051	183602	53	41.45	0.8	0.8	1.7	0.3	0.3	1.7	3	3.5
Hs.194094	AA682780	450410	0.94	0.88	0.9	0.4	1.7	0.5	1.1	1.7	4	0.9
Hs.184488	R72913	156386	0.68	0.82	1.2	0.8	1.7	0.8	1.6	1.7	1.6	3.4
Hs.72308	AA159356	593026	0.23	0.3	1.3	0.5	1.7	1.3	1.6	1.7	2.3	3.2
Hs.37317	W81506	347772	1.14	1.38	1.2	0.6	1.2	1.3	1.7	1.7	3	0.9
Hs.20152	W88497	417730	0.69	0.86	1.2	0.9	1.3	1.1	1.7	1.7	3.7	1.1
Hs.66	AA125917	501994	2.01	2.5	1.2	1.6	1.7	1	0.7	1.7	0.9	4.6
Hs.75663	AA496628	755750	14.47	12.59	0.9	0.3	1.7	0.6	0.8	1.7	0.8	3.4
Hs.103280	AA004648	428737	0.33	0.33	1	0.6	1.7	0.8	0.9	1.7	1.4	3.4
Hs.22562	H17731	50587	8.74	10.14	1.2	0.6	1.4	1	1.7	1.7	3.5	1.2
Hs.21391	H11454	47460	4.31	4.69	1.1	0.4	1.4	0.8	1.7	1.7	3.6	1.6
Hs.12286	R43026	31979	2.18	2.37	1.1	0.7	1.3	0.7	1.7	1.7	3.7	1.5
Hs.15896	N54774	283341	5.28	4.87	0.9	0.7	0.6	0.7	1.7	1.7	2.7	4.8
Hs.190116	AA442692	759164	0.23	0.32	1.4	1	1.6	1.7	1.5	1.7	3.1	2.3
Hs.98001	AA406061	743030	0.1	0.13	1.3	0.8	1.7	1.2	1.6	1.7	0.7	3.7
Hs.119498	AA485677	811108	1.08	1.13	1	0.6	1.1	0.8	1.7	1.7	1.1	4.4
Hs.218252	N34827	276449	0.46	0.65	1.4	1.4	1	1.7	1.7	1.7	3.5	2.2
Hs.162682	AA608923	1030543	2.09	2.25	1.1	0.6	1.4	0.7	1.7	1.7	4.3	1.5
Hs.76894	H68308	212394	2.61	3.46	1.3	1.1	1.6	1	1.6	1.6	1.4	3
Hs.138381	AA283983	700688	1.57	1.5	1	0.4	1	0.8	1.6	1.6	3.2	0.9
Hs.79768	W19646	306358	6.74	6.9	1	0.6	1.6	0.7	1.1	1.6	1.3	3.4
Hs.48532	N62402	288677	1.42	2.02	1.4	1.3	1.1	1.6	1.6	1.6	0.9	5.2
Hs.215257	AA430497	769926	4.05	4.88	1.2	1	1	1.1	1.6	1.6	0.4	3.4
Hs.176683	H51050	194156	0.61	0.75	1.2	0.5	1.5	1.3	1.6	1.6	3.9	1
Hs.216556	R91689	196579	1.59	2.01	1.3	0.9	1.6	1.2	1.4	1.6	5	1
Hs.105097	AA778098	379920	0.24	0.35	1.5	1.3	1.6	1.6	1.5	1.6	0.6	3.2
Hs.26350	AA459614	810937	0.11	0.07	0.6	0.4	0.1	1.6	0.4	1.6	0.3	4.2
Hs.219521	R99758	201757	1.27	1.18	0.9	1.6	0.6	0.7	0.8	1.6	3.1	0.5
Hs.173310	R89615	166934	0.21	0.24	1.1	0.4	1.6	1.2	1.3	1.6	0.6	3.3
Hs.183160	AA031284	470379	2.53	3.02	1.2	1.1	1	1.6	1	1.6	1.1	4.9
Hs.164710	T96522	121072	0.99	1.27	1.3	1	1.5	1.1	1.6	1.6	3.6	1.4

Table 1

Hs.19413	AA700005	436029	11.53	5.21	0.5	0.1	1.6	0.1	0.1	1.6	1.6	3.1
Hs.183800	AA486455	811150	0.31	0.29	0.9	0.6	1.6	0.6	1	1.6	1.2	3.1
Hs.158675	R98242	201628	11.49	16.07	1.4	1.4	1.6	1.4	1.2	1.6	3.3	1.3
Hs.76067	R01139	124824	0.1	0.12	1.2	1.6	0.3	1.5	1.4	1.6	0.9	3.1
Hs.2838	AA779401	896921	0.39	0.47	1.2	1.6	1.4	0.9	1	1.6	1.8	3
Hs.177894	R10917	129177	0.6	0.81	1.4	1.4	0.9	1.5	1.6	1.6	1.4	5.3
Hs.80162	T70901	84022	5.78	7.41	1.3	0.8	1.4	1.4	1.6	1.6	1.8	3.9
Hs.72804	AI732618	594176	5.02	6.03	1.2	1.1	1	1.1	1.5	1.5	3.5	0.8
Hs.97910	AA459410	810980	1.04	1.04	1	0.8	1.5	1.2	0.5	1.5	2.1	3.1
Hs.182585	W56753	340642	2.38	2.68	1.1	0.6	1.5	1.1	1.3	1.5	3.2	0.9
Hs.23285	AA453495	795378	1.09	1.55	1.4	1.5	1.5	1.4	1.3	1.5	1	3
Hs.214048	R08769	127458	1.7	2.33	1.4	1.5	1.2	1.3	1.5	1.5	1.2	3.7
Hs.25664	AA457108	810429	0.65	0.8	1.2	0.8	1.5	1.2	1.4	1.5	1.6	5.9
		417393	0.7	0.88	1.3	1.1	1.1	1.5	1.3	1.5	1.8	4.1
Hs.14595	H97861	251751	3.07	2.98	1	0.4	1.5	0.8	1.1	1.5	1	3.3
Hs.15075	AA709092	384831	0.78	0.87	1.1	1.1	1.5	0.8	1.1	1.5	1.6	3.3
Hs.64906	AA677300	454795	1.28	1.62	1.3	1	1.3	1.2	1.5	1.5	2.8	3.1
Hs.163892	R66922	140299	13.25	13.9	1	0.6	1.5	0.8	1.3	1.5	3.6	0.9
Hs.171099	H24688	160838	0.53	0.61	1.2	1.3	1.5	0.9	1	1.5	1.6	5.1
Hs.191742	W04411	295283	0.45	0.5	1.1	0.5	1.2	1.2	1.5	1.5	3.6	1.2
Hs.180777	AA012866	360885	17.99	14.84	0.8	0.5	1.5	0.8	0.5	1.5	0.8	3.8
Hs.38178	AA431741	782259	1.9	2.25	1.2	0.7	1.5	1.1	1.4	1.5	1.8	4
Hs.32793	AA491292	824658	0.65	0.61	0.9	1.5	0.9	0.6	0.8	1.5	1	3.5
Hs.110457	W69960	343919	0.95	1.22	1.3	1.3	1.5	1	1.3	1.5	1.1	3.2
Hs.13640	H40323	191787	1.73	1.9	1.1	0.9	1.1	1	1.5	1.5	3	1.2
Hs.120882	AA704370	383752	1.82	1.88	1	0.5	1.4	0.7	1.4	1.4	3.5	0.6
Hs.45743	AA055349	377252	1.1	1.26	1.2	1.2	1.4	1.2	0.7	1.4	1.5	3.3
Hs.173930	W94401	358748	2.85	2.89	1	0.8	1.4	0.6	1.2	1.4	1.3	3.8
Hs.217554	R06705	126449	0.24	0.25	1.1	0.8	1.4	0.9	1.2	1.4	3.4	1
Hs.95665	R94456	198256	0.89	0.89	1	0.8	0.7	1.1	1.4	1.4	3.2	0.8
Hs.168054	AA187982	626551	0.2	0.21	1	0.8	1.4	1.1	0.8	1.4	1.1	10.3
Hs.121987	AA777915	449346	1.05	0.83	0.8	0.4	1.4	0.6	0.8	1.4	3.3	1
Hs.210787	W00856	296010	5.37	5.82	1.1	0.6	1.3	1	1.4	1.4	3.1	1.3
Hs.24115	AA256157	681865	0.79	0.79	1	1.1	1	0.5	1.4	1.4	1.4	3.8
Hs.952	T68645	83444	0.21	0.24	1.1	1.1	1.1	1.4	0.8	1.4	1	3.6

Table 1

Hs.58913	W86832	416889	0.73	0.81	1.1	1.1	1	1	1.4	1.4	3.3	1.1
Hs.62790	AA047436	488436	0.1	0.08	0.8	0.3	0.6	1.4	0.8	1.4	1.3	4
Hs.136227	AA007619	429446	0.16	0.16	0.9	0.9	0.5	1.1	1.4	1.4	1.7	3.2
Hs.165743	AA679286	432075	0.1	0.06	0.6	1.3	0.1	0.3	0.7	1.3	0.6	3.9
Hs.127985	AA447453	784178	0.21	0.23	1.1	0.9	1.2	1.1	1.3	1.3	3.1	1.2
Hs.91579	AA459148	814428	2.54	2.73	1.1	1.3	1.3	0.6	1	1.3	1	3.1
Hs.10326	AA776942	858979	0.1	0.06	0.6	0	1.3	0.5	0.6	1.3	3.9	0.9
Hs.15093	R63790	139354	1.82	1.18	0.6	0.3	1.3	0.4	0.6	1.3	0.7	4.9
Hs.155191	AA411440	755145	43.54	38.94	0.9	0.4	1.3	0.6	1.3	1.3	0.5	4.2
Hs.117592	H04757	152270	1.49	1.31	0.9	0.6	1.3	0.5	1.1	1.3	3.3	0.6
Hs.18442	AA404288	758356	0.14	0.13	0.9	0.6	1.3	1.1	0.8	1.3	0.8	3.1
Hs.9731	AA806371	1350468	0.1	0.06	0.6	0.7	0.1	0.3	1.3	1.3	0.5	3.2
Hs.23822	W56597	340864	7.1	3.62	0.5	1.3	0.4	0.1	0.3	1.3	5.3	0.2
Hs.183153	H15084	49553	2.36	1.46	0.6	0.3	1.3	0.6	0.3	1.3	0.9	4.4
Hs.48362	N59289	289774	0.71	0.77	1.1	1	1.2	0.9	1.1	1.2	3.2	1.8
Hs.220087	AA446016	781012	0.68	0.74	1.1	0.7	1.2	1.2	1.2	1.2	2.1	3.2
Hs.75212	AA460115	796646	3.75	3.21	0.9	1.2	0.8	0.7	0.7	1.2	0.5	3.7
Hs.194637	N68408	292424	0.38	0.28	0.7	0.4	0.6	0.7	1.2	1.2	4	0.6
Hs.77266	AA464152	810331	3.48	2.12	0.6	0.4	1.2	0.2	0.6	1.2	5.3	1.1
Hs.77324	AA456664	811999	0.92	0.84	0.9	0.9	1.2	0.6	1	1.2	1.3	3.2
Hs.188521	AA146968	505506	1.24	1.05	0.8	0.4	1.2	0.7	1.2	1.2	3.7	0.9
Hs.92374	H93832	242037	0.45	0.36	0.8	1.2	0.8	0.5	0.7	1.2	3.8	0.7
Hs.171960	AA453872	813738	0.11	0.07	0.7	1.2	0.3	0.4	0.8	1.2	0	3.2
Hs.79025	W68511	342720	0.72	0.5	0.7	0.5	1.2	0.8	0.3	1.2	3.1	0.9
Hs.37599	AA009809	429848	0.13	0.1	0.8	0.6	0.8	0.5	1.2	1.2	3.1	0.8
Hs.47223	N51297	283070	0.12	0.07	0.6	0.7	1.2	0.4	0.2	1.2	0.4	3.1
Hs.29427	N64175	277820	1.7	1.55	0.9	1	0.8	1.2	0.7	1.2	0.9	4.2
Hs.19686	AA478268	740914	7.86	6.47	0.8	0.5	0.7	0.9	1.1	1.1	0.4	3.9
Hs.14543	W85878	416075	1.01	1.03	1	1.1	1.1	0.9	1	1.1	1.7	3.8
Hs.71187	AA702639	384013	1.45	1.34	0.9	0.6	1.1	1.1	0.9	1.1	0.8	3
Hs.388	AA444020	756502	2.26	1.78	0.8	0.7	1.1	0.6	0.7	1.1	0.8	3.9
Hs.8179	AA634427	743860	0.1	0.07	0.7	0.4	0.5	1.1	0.7	1.1	0	3.8
Hs.114111	AA702304	384058	0.89	0.81	0.9	1.1	0.9	0.8	0.9	1.1	3.5	0.9
Hs.168913	AA135914	502397	2.01	1.25	0.6	0.5	0.4	0.5	1	1	3	1.2
Hs.173231	H13300	148379	1.67	1.05	0.6	0.5	0.6	0.5	1	1	1.1	8.8

Table 1

Hs.19686	AA478268	740914	8.28	6.77	0.8	0.7	0.6	1	1	1	0.5	4.3
Hs.48615	N62731	289020	0.43	0.35	0.8	0.6	1	0.7	0.9	1	0.9	7.7
Hs.199160	W16724	302190	0.11	0.1	0.9	1	0.5	1	0.9	1	1.7	7.7
Hs.155489	AA150638	504661	6.65	4.46	0.7	0.4	1	0.7	0.6	1	0.4	5.2
Hs.109900	W46679	324154	274.68	125.27	0.5	0.2	1	0.3	0.4	1	0.7	7.3
Hs.119498	AA485677	811108	1.58	1.04	0.7	0.4	1	0.5	0.7	1	1.5	4.1
Hs.12382	H19026	51231	1.23	0.8	0.6	1	0.5	0.6	0.5	1	5.7	0.6
Hs.99910	AA608558	950682	5.59	3.81	0.7	0.9	1	0.4	0.5	1	1.5	3.2
Hs.97174	AA496058	743016	0.19	0.12	0.6	0.9	0.7	0.5	0.5	0.9	0	3
Hs.105043	AA460254	796519	1.08	0.54	0.5	0.3	0.5	0.3	0.9	0.9	0.4	13
Hs.202589	R16524	128695	0.5	0.37	0.7	0.7	0.9	0.6	0.7	0.9	1.3	4.5
Hs.37616	AA453832	813675	1.68	1.11	0.7	0.9	0.4	0.9	0.4	0.9	1	4.1
Hs.3254	AA453015	788334	1.27	0.73	0.6	0.3	0.7	0.3	0.9	0.9	1.5	13.2
Hs.19385	AA733195	399513	4.14	2.84	0.7	0.6	0.9	0.9	0.4	0.9	3.2	1.7
Hs.149570	AA865878	1456962	4.97	3.53	0.7	0.5	0.7	0.8	0.9	0.9	0.8	3.5
Hs.191708	AA521370	826985	0.46	0.4	0.9	0.9	0.8	0.9	0.9	0.9	0.3	5.6
Hs.80731	AA479243	753897	1.9	1.33	0.7	0.6	0.8	0.6	0.9	0.9	3.1	0.9
Hs.94831	W72909	344988	0.99	0.72	0.7	0.7	0.7	0.9	0.6	0.9	3.9	2.2
Hs.107159	R70598	141854	16.89	9.78	0.6	0.3	0.9	0.3	0.8	0.9	4.2	1.5
Hs.82646	AA435948	730555	2.64	1.7	0.6	0.4	0.9	0.9	0.5	0.9	1.1	4.3
Hs.101651	H06273	44292	1.88	1.37	0.7	0.9	0.6	0.8	0.6	0.9	5.6	0.9
Hs.25333	H78484	233583	1.52	0.73	0.5	0.9	0.4	0.4	0.3	0.9	4.2	1
Hs.107840	H79559	239662	0.32	0.25	0.8	0.9	0.8	0.6	0.8	0.9	3.3	1.4
Hs.99306	AA454016	795284	1.6	0.86	0.5	0.3	0.7	0.4	0.8	0.8	0.5	6.6
Hs.173125	H05580	43884	5.8	3.95	0.7	0.7	0.8	0.5	0.7	0.8	4.1	1.5
Hs.173125	AA404286	758343	16.09	9.19	0.6	0.5	0.7	0.3	0.7	0.7	3.1	1.7
Hs.191882	AA677183	454668	0.96	0.53	0.6	0.7	0.5	0.6	0.4	0.7	1.8	3.4
Hs.16032	H18715	50939	1.4	0.9	0.6	0.7	0.7	0.7	0.5	0.7	0.5	5.9
Hs.124963	R72688	156322	0.1	0.04	0.4	0	0.7	0.6	0.2	0.7	0.8	5.1
Hs.71827	AA100612	562867	313.94	157.08	0.5	0.4	0.7	0.3	0.7	0.7	1.2	4.5
Hs.77573	AA099568	489677	8.37	3.16	0.4	0.6	0.4	0.2	0.3	0.6	6.6	2.3
Hs.8688	AA521103	826324	6.28	1.86	0.3	0.2	0.6	0.2	0.2	0.6	5.7	0.4
Hs.97127	AA448257	782826	0.1	0.02	0.2	0.5	0	0	0.1	0.5	3.5	0.6
Hs.92774	N53641	282100	1.2	0.5	0.4	0.5	0.4	0.3	0.4	0.5	0.6	7.1
Hs.10590	AA045074	487165	0.17	0.05	0.3	0.3	0.5	0.3	0.1	0.5	3	1.5

Table 1

Hs.347	AA677706	460487	1.4	0.48	0.3	0.3	0.4	0.5	0.2	0.5	7.7	0.4
Hs.2022	N90882	301735	4.26	0.7	0.2	0.4	0	0.1	0.1	0.4	6	0.1
Hs.4437	AA486746	841044	3.94	0.83	0.2	0.2	0.4	0.1	0.1	0.4	1	5.1
Hs.35937	AA176764	611255	0.11	0.02	0.2	0.1	0	0.2	0.4	0.4	9.9	0.3
Hs.214643	H16789	50460	0.1	0.01	0.1	0	0	0.2	0.2	0.2	0	7.8
Hs.217469	N35945	269416	0.1	0	0	0	0	0	0	0	15.2	0.3

Table 2

Cluster Id (89)	Accession No.	Clone	Cancer Cell Pool	Normal Cell Pool	Tumor Cell Pool / Normal Cell Pool
Hs.99545	AA461492	795820	37.88906	0.55570936	68.18
Hs.167406	R40176	27769	10.0562725	0.1479926	67.95
Hs.3235	AA629189	1035889	41.31152	0.7235154	57.1
Hs.218373	W76320	345034	20.182032	0.5213177	38.71
Hs.218945	W52627	325641	53.620087	1.4774103	36.29
Hs.173609	R96568	199635	46.098686	1.6197994	28.46
Hs.17409	AA873604	1323448	35.836227	1.4090223	25.43
Hs.173609	N41768	259591	29.099075	1.3235981	21.98
Hs.103391	H08560	45542	14.588298	0.70840555	20.59
Hs.154424	R62242	139766	7.76813	0.40302408	19.27
Hs.43498	AA416767	731311	34.990387	1.8156898	19.27
Hs.169980	R74004	143287	11.34063	0.5950199	19.06
Hs.173609	N47302	279319	5.454711	0.33843157	16.12
Hs.38586	R68803	141966	8.045428	0.5020416	16.03
Hs.34853	AA453341	789369	5.4364786	0.3542481	15.35
Hs.173609	T95748	120189	11.934651	0.86041546	13.87
Hs.220207	R26803	132594	4.712786	0.3649303	12.91
Hs.10511	AA455496	809719	17.775017	1.4231591	12.49
Hs.21454	AA844124	1388373	2.5322928	0.204195	12.4
Hs.86023	AA456370	813242	5.002651	0.4458224	11.22
Hs.4854	W00390	291057	3.495009	0.31174585	11.21
Hs.32793	AA491292	824658	5.2341585	0.4675331	11.2
Hs.26640	R59304	37901	1.7950063	0.16245693	11.05
Hs.7688	H15677	49303	2.6777713	0.24756639	10.82
Hs.77729	AA682386	461759	7.389249	0.69971716	10.56
Hs.7882	AA478747	753982	5.433695	0.5345776	10.16
Hs.77326	AA598601	898218	48.17856	4.764757	10.11
Hs.93909	H82536	220096	6.6931114	0.67231	9.96
Hs.4975	H51461	179534	8.755309	0.8803843	9.94
Hs.21666	R15708	66428	5.190258	0.52730346	9.84
Hs.82547	N94424	309583	3.319184	0.34797657	9.54
Hs.59761	AA453863	813719	4.343877	0.45785466	9.49

Table 2

Hs.194744	AA815407	1375309	3.3776193	0.35938513	9.4
Hs.44208	N30680	258300	8.693047	0.9339012	9.31
Hs.169756	T62048	85634	16.792364	1.8356493	9.15
Hs.214053	N30553	257162	6.298909	0.7275723	8.66
Hs.93868	AA292283	725841	2.8933716	0.34013343	8.51
Hs.180126	R46000	35804	1.0019037	0.11824865	8.47
Hs.21851	R98407	200656	4.1084747	0.48628604	8.45
Hs.171740	R61372	37980	0.8339782	1.00E-01	8.34
Hs.65029	AA025884	365826	0.87471724	0.10575633	8.27
Hs.218559	R65993	140107	5.4063363	0.66070336	8.18
Hs.74555	H23315	52079	1.0659575	0.1314939	8.11
Hs.68879	AA463224	797048	7.295759	0.9054861	8.06
Hs.56966	AA504752	825647	2.7183576	0.34122717	7.97
Hs.34853	AA454080	788234	2.8956099	0.3711012	7.8
Hs.75426	H40604	174627	4.7513857	0.6164309	7.71
Hs.107527	R66438	41869	0.9879532	0.12838551	7.7
Hs.82071	AA115076	491565	18.167091	2.3879662	7.61
Hs.83213	W21107	307660	6.580035	0.87726176	7.5
Hs.119651	AA775872	878564	7.303402	1.0030828	7.28
Hs.214370	AA165410	593537	3.5417328	0.48900104	7.24
Hs.188006	N74762	246377	7.2217627	1.000915	7.22
Hs.21851	H68664	212542	2.3686357	0.33283263	7.12
Hs.202949	R23270	131452	2.0474825	0.28939098	7.08
Hs.46626	N46872	279224	2.5121002	0.36599264	6.86
Hs.37189	AA476438	785293	2.819982	0.4111809	6.86
Hs.74376	H23123	52076	1.6648376	0.24315602	6.85
Hs.219428	R37511	137230	2.3606982	0.3487601	6.77
Hs.146688	AA436290	754378	19.294552	2.8560352	6.76
Hs.88044	AA055439	377468	9.365772	1.3923073	6.73
Hs.47343	W93592	357278	1.1090403	0.16487308	6.73
Hs.21016	R61662	42627	1.6309056	0.24519017	6.65
Hs.71738	AA142923	505227	1.0455863	0.15774776	6.63
Hs.181368	AA621761	1030855	11.511078	1.7528052	6.57
Hs.114362	N26171	269425	4.22519	0.65003	6.5
Hs.30743	AA598817	897956	2.6794066	0.41519383	6.45

Table 2

Hs.196172	AA454098	788256	7.4448953	1.1559085	6.44
Hs.44892	AA137144	491184	8.919928	1.4064137	6.34
Hs.93764	AA016234	359285	8.920166	1.4355993	6.21
Hs.197921	AA085319	547247	9.008879	1.4534123	6.2
Hs.96055	AA424950	768260	7.087829	1.1454717	6.19
Hs.33106	W76368	345081	0.67365384	0.10888602	6.19
Hs.150917	H46041	177772	4.779402	0.77636415	6.16
Hs.69517	AA447522	782575	11.55047	1.8783798	6.15
Hs.202949	AA189106	626390	0.7764008	0.12666807	6.13
Hs.72026	AA620757	1049287	3.8327894	0.6299015	6.08
Hs.760	R32405	135688	1.1565742	0.19034353	6.08
Hs.183389	R44346	34294	3.8833218	0.64289045	6.04
Hs.190399	W31683	320764	1.5956521	0.26633513	5.99
Hs.21902	H29226	52704	4.280271	0.71931994	5.95
Hs.129135	R45976	35788	2.0959203	0.35531288	5.9
Hs.219521	R99758	201757	5.434268	0.92641735	5.87
Hs.23650	AA398262	726699	0.65582746	0.111894056	5.86
Hs.94612	W38679	320857	2.0942254	0.357962	5.85
Hs.80395	AA227594	667482	11.407349	1.9608079	5.82
Hs.15970	AA156982	502527	0.5811434	1.00E-01	5.81
Hs.203146	AA481397	746321	3.0047374	0.5193862	5.79
Hs.7473	AA669536	853985	3.1253462	0.5410156	5.78
Hs.55563	W37833	322033	3.5361195	0.63208	5.59
Hs.198433	AA838691	1387760	4.361596	0.78067696	5.59
Hs.80449	T57441	74738	13.086714	2.343377	5.58
Hs.194720	R42781	32110	1.3078089	0.23608801	5.54
Hs.99886	AA677687	460470	1.6813799	0.3040248	5.53
Hs.7962	AA707086	451587	5.0709167	0.9178428	5.52
Hs.195438	H17883	50182	2.4318714	0.44379145	5.48
Hs.55173	AA411204	754653	3.0223103	0.55172443	5.48
Hs.203779	AA026682	366971	22.72086	4.1632853	5.46
Hs.21400	AA620528	951305	4.4813323	0.82119536	5.46
Hs.74565	N77772	289645	2.8770237	0.53795314	5.35
Hs.216100	R51021	38642	1.1391479	0.21472561	5.31
Hs.7644	T66816	66317	11.8539505	2.2485635	5.27

Table 2

Hs.109643	H92758	231802	5.918216	1.1349516	5.21
Hs.198708	N58494	248261	2.4597163	0.47280836	5.2
Hs.177632	R40649	28422	1.3948176	0.2681466	5.2
Hs.80684	AA019203	363103	7.662954	1.485671	5.16
Hs.49047	N64737	293331	1.1607425	0.2251301	5.16
Hs.84154	H22481	173674	2.7329211	0.53091156	5.15
Hs.9615	AA877166	1473274	9.683773	1.8877118	5.13
Hs.179718	AA456878	815526	11.02128	2.1534843	5.12
Hs.169300	N45138	282978	2.353449	0.4609806	5.11
Hs.119997	AA707185	451936	3.5138168	0.68886364	5.1
Hs.170195	W73527	344430	7.06868	1.3863261	5.1
Hs.49476	AA046790	488404	2.0365374	0.39964104	5.1
Hs.169965	AA598668	898258	1.8869927	0.37044063	5.09
Hs.188006	AA486017	843250	33.29741	6.566578	5.07
Hs.76807	R47979	153411	2.917305	0.5802822	5.03
Hs.95008	AA464595	812955	3.359422	0.66966796	5.02
Hs.216085	T95274	120162	3.041825	0.61304426	4.96
Hs.101651	H06273	44292	93.40402	19.06882	4.9
Hs.8963	R32078	134430	0.9541222	0.19703524	4.84
Hs.10587	AA877815	1161564	5.078807	1.0512935	4.83
Hs.26971	H23265	52226	2.0801558	0.43234998	4.81
Hs.188006	AA599094	950450	18.17868	3.8479013	4.72
Hs.82226	AA425587	773330	15.63583	3.314015	4.72
Hs.184297	AA401275	758298	2.0872478	0.44403416	4.7
Hs.80828	AA706022	379771	1.0672253	0.22896768	4.66
Hs.99395	AA455133	809869	1.3237956	0.28645673	4.62
Hs.41350	H97868	251769	2.415238	0.5258706	4.59
Hs.78919	H19371	51599	1.1367826	0.24792042	4.59
Hs.218240	AA404269	758309	5.2063103	1.139055	4.57
Hs.92374	H93832	242037	1.8169587	0.3980047	4.57
Hs.50966	T61078	83605	6.4615498	1.418912	4.55
Hs.111720	AA703216	435984	2.0342674	0.44767135	4.54
Hs.23963	R46794	36480	0.583423	0.12841526	4.54
Hs.172896	AA703384	450043	2.6534216	0.5841479	4.54
Hs.82985	AA461456	796613	11.2196045	2.4777966	4.53

Table 2

Hs.56782	R40918	28225	1.4225235	0.31778207	4.48
Hs.26395	R71689	155575	2.9689088	0.6659404	4.46
Hs.215713	AA873564	1473131	1.889778	0.42407882	4.46
Hs.102647	N50152	282868	6.3020134	1.422301	4.43
Hs.76392	AA664101	855624	9.767248	2.2047927	4.43
Hs.199147	R19158	129865	14.178182	3.2031364	4.43
Hs.123873	H09939	46461	0.9114909	0.2077404	4.39
Hs.4243	R52901	41569	0.47607732	0.10862775	4.38
Hs.120026	AA707550	451664	4.592016	1.0521836	4.36
Hs.71124	AA437355	770789	0.68000686	0.15710838	4.33
Hs.92395	N30751	257955	7.16339	1.6564555	4.32
Hs.215775	R54160	41720	0.50362015	0.116676256	4.32
Hs.76888	AA448015	784876	3.2611732	0.7566093	4.31
Hs.3796	AA609284	1031552	3.0740304	0.7141714	4.3
Hs.58169	W72679	345787	5.0688	1.1780196	4.3
Hs.1624	AA857015	1474684	13.565613	3.1620064	4.29
Hs.1369	R09561	128126	21.426147	5.001834	4.28
Hs.124275	R51382	39219	0.42500407	1.00E-01	4.25
Hs.20734	AA682642	450680	3.21379	0.75772375	4.24
Hs.77204	T87341	115443	7.033841	1.658613	4.24
Hs.194720	N75239	288736	1.7143102	0.40516925	4.23
Hs.119768	AA677025	454564	1.1353431	0.26835227	4.23
Hs.76688	AA043416	487458	1.2436345	0.29409945	4.23
Hs.21947	R49587	38477	0.60493475	0.14340414	4.22
Hs.219143	H40964	177074	1.3062868	0.31032896	4.21
Hs.77204	AA701455	435076	18.25991	4.385061	4.16
Hs.35701	R97233	200418	8.348936	2.0165224	4.14
Hs.87507	AA236085	684277	1.9623163	0.47399056	4.14
Hs.192674	N24609	267293	9.364886	2.2638483	4.14
Hs.748	R54610	154472	2.9630108	0.71766865	4.13
Hs.214059	T70437	67067	5.498784	1.3346219	4.12
Hs.7908	H29268	49842	1.2345369	0.30035233	4.11
Hs.16426	N80294	290378	4.3288264	1.054105	4.11
Hs.76669	T72235	85840	22.463188	5.4702806	4.11
Hs.32934	AA423940	759865	2.7674456	0.6785382	4.08

Table 2

Hs.10756	AA446979	784212	3.6330996	0.89469945	4.06
Hs.219016	AA029597	366887	1.1852897	0.2934497	4.04
Hs.17860	R59722	42793	2.2482367	0.5591715	4.02
Hs.49738	N69694	293727	1.8281854	0.45482957	4.02
Hs.2820	AA085759	488276	0.8385806	0.2090672	4.01
Hs.4224	H23324	51774	3.2558699	0.81383556	4
Hs.181366	W88967	417711	1.1443057	0.2863334	4
Hs.107139	AA150263	491644	3.009827	0.75567067	3.98
Hs.50078	N71769	290702	0.6372556	0.16126125	3.95
Hs.116774	H68952	212078	3.945419	0.998526	3.95
Hs.218794	W21597	307050	0.3948704	1.00E-01	3.95
Hs.12248	H24352	52186	0.40393454	0.10235033	3.95
Hs.177743	AA779165	453005	50.90062	12.9133625	3.94
Hs.160786	AA676466	882522	21.842684	5.5654755	3.92
Hs.112269	AA625653	745339	3.1246836	0.7980391	3.92
Hs.209862	N94488	309895	7.231681	1.8473377	3.91
Hs.57653	AA037399	321253	0.3910473	1.00E-01	3.91
Hs.107253	R20416	32576	0.522521	0.13379785	3.91
Hs.25527	AA402159	741919	1.1950796	0.30866787	3.87
Hs.47099	AA134576	502625	2.2393048	0.5825623	3.84
Hs.74070	W23757	327676	168.5336	44.020096	3.83
Hs.94234	W01830	298134	1.079703	0.2822823	3.82
Hs.169980	R69567	141677	1.6931856	0.44323272	3.82
Hs.7988	N91900	306806	3.2585835	0.8560498	3.81
Hs.3321	R55185	154654	1.5252082	0.40571702	3.76
Hs.11252	AA598538	898162	4.3161263	1.1491938	3.76
Hs.186814	AA700879	452363	6.8884554	1.8348601	3.75
Hs.12744	AA040332	376040	1.637145	0.4364055	3.75
Hs.4822	AA608555	950676	3.6303494	0.96776134	3.75
Hs.71612	AA136155	490071	0.6293344	0.16929418	3.72
Hs.219937	AA293782	726860	2.79311	0.75169694	3.72
Hs.21169	R40228	30102	0.3750366	0.1011975	3.71
Hs.77171	AA283961	700721	8.671083	2.3516517	3.69
Hs.181366	AA664195	855547	1.7310278	0.47152936	3.67
Hs.5086	R37738	26806	0.39019346	0.10647267	3.66

Table 2

Hs.116415	AA609189	1031446	0.3663202	1.00E-01	3.66
Hs.181304	H09461	46284	0.36253625	1.00E-01	3.63
Hs.24284	H23985	51469	4.430372	1.2230453	3.62
Hs.75613	N39161	243816	2.2722044	0.62843835	3.62
Hs.62273	AA620485	951241	28.553158	7.900218	3.61
Hs.49075	N64817	284664	1.4850603	0.4116072	3.61
Hs.8963	AA424657	767172	2.3015656	0.6398673	3.6
Hs.77695	W93568	357373	7.762477	2.1632009	3.59
Hs.169980	R70867	142556	1.9400704	0.5409688	3.59
Hs.202584	AA199717	647397	3.9060383	1.0956266	3.57
Hs.30114	AA634371	743810	7.036565	1.9850724	3.54
Hs.19641	AA625788	744905	12.304854	3.4939313	3.52
Hs.169647	R20227	32664	0.35205948	1.00E-01	3.52
Hs.119571	T98612	122159	1.413851	0.40245998	3.51
Hs.216718	H99075	262060	3.2012582	0.9137726	3.5
Hs.77695	AA262211	686172	8.785774	2.5092592	3.5
Hs.153954	H59725	207550	2.866273	0.8200558	3.5
Hs.82226	W76584	345616	2.965765	0.84888303	3.49
Hs.48507	N62301	290370	1.2179945	0.34870622	3.49
Hs.117106	AA678160	431944	14.24893	4.082715	3.49
Hs.48682	N62969	289742	0.3590349	0.10315505	3.48
Hs.70704	R96941	200402	6.279312	1.8064365	3.48
Hs.15061	T90074	110582	3.4101825	0.98126125	3.48
Hs.181366	AA486460	811139	4.2442927	1.2220414	3.47
Hs.215775	R13517	26505	1.8782401	0.5421759	3.46
Hs.214749	AA421481	731084	0.34634972	1.00E-01	3.46
Hs.75149	R12817	26249	0.83764535	0.24206954	3.46
Hs.5753	R17337	32299	6.2936296	1.8236518	3.45
Hs.73333	AA174106	609950	0.5420745	0.15744773	3.44
Hs.104915	AA431734	782266	1.3648399	0.39754796	3.43
Hs.75379	AA453823	813678	3.8316183	1.1172552	3.43
Hs.58451	AA700758	435371	3.710897	1.0828706	3.43
Hs.184670	AA099251	489519	7.934058	2.3160434	3.43
Hs.7854	AA453577	795198	35.79716	10.460623	3.42
Hs.26653	R59371	38029	0.4068333	0.118892044	3.42

Table 2

Hs.21894	AA047499	488431	1.0157473	0.29809558	3.41
Hs.89319	W46977	325057	0.59581935	0.17533422	3.4
Hs.102267	W60414	341680	1.0503509	0.3092746	3.4
Hs.1279	T69603	83549	6.7866526	1.999654	3.39
Hs.111065	N92188	290235	1.305875	0.38531125	3.39
Hs.174070	AA464729	810600	14.387886	4.250308	3.39
Hs.87747	R33720	135900	4.4408636	1.3163973	3.37
Hs.215051	R00275	123255	5.057413	1.5004439	3.37
Hs.63063	AA056057	380884	1.1990473	0.35642985	3.36
Hs.19322	AA088457	511096	8.404213	2.4983666	3.36
Hs.23871	AA428117	773443	4.759605	1.4165323	3.36
Hs.21810	R45636	35725	0.7996111	0.23815107	3.36
Hs.65114	AA664179	855521	25.457287	7.596799	3.35
Hs.103305	AA010188	430186	0.33359975	1.00E-01	3.34
Hs.145061	T96601	121239	0.7213629	0.21681684	3.33
Hs.95577	AA486312	842806	13.922761	4.1921873	3.32
Hs.26519	N42045	259884	7.0773525	2.1339514	3.32
Hs.6139	W90175	418159	2.2528157	0.6818604	3.3
Hs.196379	H84211	219638	6.902545	2.092043	3.3
Hs.31854	W93188	414992	4.318928	1.3104584	3.3
Hs.50943	AA282983	713109	1.1355895	0.34470648	3.29
Hs.75742	AA155942	590264	0.9864713	0.29998296	3.29
Hs.97179	AA491256	824260	1.4361224	0.4374633	3.28
Hs.25740	R07141	126763	0.93865883	0.2865795	3.28
Hs.83354	AA676458	882506	2.7041664	0.82691497	3.27
Hs.49776	AA191464	627279	1.9812825	0.60804784	3.26
Hs.125134	AA293727	725629	0.94027203	0.28919044	3.25
Hs.91216	AA489111	824920	3.5874739	1.1035985	3.25
Hs.105097	AA778098	379920	3.8825812	1.1959403	3.25
Hs.18955	AA417920	767403	3.166998	0.9793707	3.23
Hs.119689	AA677403	454908	2.039664	0.63172835	3.23
Hs.147097	H95424	256664	8.382148	2.609032	3.21
Hs.119403	AA733203	399604	7.2445626	2.2562323	3.21
Hs.21543	R43798	35300	8.743126	2.7234428	3.21
Hs.72157	AA464691	810224	4.8292704	1.5047103	3.21

Table 2

Hs.218697	R92852	196824	1.5502248	0.48529333	3.19
Hs.49725	AA397906	726508	0.90145266	0.28333756	3.18
Hs.178144	W04744	298766	1.438386	0.4524015	3.18
Hs.185029	AA195420	665542	0.65952384	0.20749196	3.18
Hs.14570	AA625991	745495	5.468564	1.729177	3.16
Hs.44095	N29825	270883	4.7487297	1.5018878	3.16
Hs.155691	AA401304	741880	0.9224471	0.29177484	3.16
Hs.78977	R17394	31072	0.45400617	0.14416105	3.15
Hs.58589	H04891	43733	0.6757958	0.21508369	3.14
Hs.1770	AA291715	725266	5.104355	1.625284	3.14
Hs.27267	N53906	281597	2.2222614	0.7076073	3.14
Hs.11673	AA706901	451649	18.382599	5.8548336	3.14
Hs.109437	N66354	285367	2.2576423	0.7194429	3.14
Hs.170225	H21943	160233	12.05778	3.858224	3.13
Hs.25341	H09245	46197	0.8520854	0.27270934	3.12
Hs.193897	AA487191	841278	4.6425133	1.4863175	3.12
Hs.153479	AA948058	1416055	1.9811864	0.6355125	3.12
Hs.30504	H06580	44387	0.6819998	0.21886078	3.12
Hs.20072	AA173408	595181	4.8932695	1.5717051	3.11
Hs.44197	AA452091	786695	2.4713202	0.79451674	3.11
		81331	5.3579574	1.7227204	3.11
Hs.23348	R22239	130824	8.123491	2.6149259	3.11
Hs.56023	AA262988	668851	3.8250713	1.2325962	3.1
Hs.86178	N28754	266855	1.7455153	0.56249183	3.1
Hs.44634	N34839	276502	0.310288	1.00E-01	3.1
Hs.106541	R35948	38260	0.3441326	0.110955454	3.1
Hs.19545	AA677200	454698	1.1765261	0.38078704	3.09
Hs.84038	H83225	198960	7.8150997	2.5357678	3.08
Hs.25986	AA628232	1055764	5.8721275	1.908881	3.08
Hs.73847	AA150487	491727	146.52225	47.665215	3.07
Hs.109299	W75957	344942	0.30721164	1.00E-01	3.07
Hs.214284	H06675	44505	0.6587855	0.21490367	3.07
Hs.3682	AA062802	366126	2.6062899	0.85215676	3.06
Hs.12871	H05934	43461	2.5720663	0.84201497	3.05
Hs.19193	AA463797	796495	0.5873755	0.19233419	3.05

Table 2

Hs.81182	H53275	202577	0.8649411	0.28356594	3.05
Hs.86185	W88571	417424	0.40194649	0.13185662	3.05
Hs.239	AA129552	564803	7.745082	2.5473871	3.04
Hs.18616	T99312	122397	5.087256	1.6741593	3.04
Hs.33010	AA701242	434863	0.6078278	0.20009285	3.04
Hs.79672	R41998	32076	0.92008543	0.30339456	3.03
Hs.13479	H16997	50238	1.7609248	0.58081526	3.03
Hs.105244	AA489648	823699	1.9121202	0.6314968	3.03
Hs.98384	AA460529	796624	0.343579	0.11356646	3.03
Hs.49922	N70759	298104	1.1029224	0.36456016	3.03
Hs.55080	W37683	321905	1.999043	0.66078	3.03
Hs.96992	AA421171	731095	9.595005	3.173582	3.02
Hs.55045	N94404	309556	12.576262	4.1634026	3.02
Hs.103262	AA598635	897874	0.3020192	1.00E-01	3.02
Hs.10491	AA033742	375716	1.3990183	0.46349552	3.02
Hs.189917	W93382	415095	1.3397443	0.4446423	3.01
Hs.20830	N69491	292933	3.342856	1.1104056	3.01
Hs.22180	R41981	31955	0.30093753	1.00E-01	3.01
Hs.19-094	AA682780	450410	0.77064294	0.25611597	3.01
Hs.21689	R16137	66497	1.6835915	0.56057	3
Hs.215722	AA126195	502689	1.3845032	0.461613	3
Hs.125830	N24155	269563	4.953065	1.6517986	3
Hs.200451	AA279172	704076	5.306224	1.7703334	3
Hs.56066	W51760	324383	0.31380463	0.10471478	3

Table 3

Cluster Id	Accession No.	Clone	Avg. Norm	Avg. Tumor	Avg. Fold	Fold Mayo9	Fold Mayo11	Fold Mayo16	Fold Mayo19	Max Fold	Cancer Cell Pool / Normal Cell Pool
Hs.167406	R40176	27769	1.997	3.2212	1.61	3.23	0.14	2.8	0.28	3.23	67.95
Hs.154424	R62242	139766	7.5041	10.9883	1.46	4.26	0.69	0.6	0.31	4.26	19.27
Hs.173609	T95748	120189	11.8385	24.7658	2.09	0.36	2.4	1.17	4.44	4.44	13.87
Hs.77729	AA682386	461759	1.1839	2.08	1.76	1.76	3.28	0.97	1.02	3.28	10.56
Hs.194744	AA815407	1375309	0.1879	0.3934	2.09	0.81	1.09	1.68	4.79	4.79	9.4
Hs.214053	N30553	257162	2.8631	4.8086	1.68	0.68	1.83	0.45	3.76	3.76	8.66
Hs.21851	R98407	200656	3.4277	6.4972	1.9	0.75	0.65	2.86	3.31	3.31	8.45
Hs.37189	AA476438	785293	0.4258	1.1402	2.68	2.77	1.64	2.05	4.25	4.25	6.86
Hs.219428	R37511	137230	0.5981	1.1915	1.99	1.51	1.31	3.38	1.77	3.38	6.77
Hs.30446	AA016980	361587	0.2828	0.4529	1.6	0.91	0.85	1.43	3.21	3.21	6.75
Hs.47343	W93592	357278	0.5724	1.0037	1.75	2.06	0.36	3.82	0.77	3.82	6.73
Hs.21016	R61662	42627	0.5752	0.7048	1.23	3.14	0.5	0.71	0.55	3.14	6.65
Hs.30743	AA598817	897956	0.6027	0.9573	1.59	4.64	0.9	0.35	0.47	4.64	6.45
Hs.129135	R45976	35788	0.2846	0.6202	2.18	3.52	0.94	2.93	1.33	3.52	5.9
Hs.2879	AA845178	1412503	0.1263	0.291	2.3	1.83	1.92	1.47	3.99	3.99	4.86
Hs.106597	AA025898	366315	0.1	0.1881	1.88	3.73	0.96	1.96	0.88	3.73	4.52
Hs.102647	N50152	282868	1.2901	2.658	2.06	1.19	3.68	1.3	2.07	3.68	4.43
Hs.71124	AA437355	770789	0.8698	1.6231	1.87	0.75	1.18	3.36	2.18	3.36	4.33
Hs.154917	AA418200	767739	0.1	0.2034	2.03	2.52	0.92	3.56	1.14	3.56	4.31
Hs.1624	AA857015	1474684	7.784	16.9687	2.18	2.35	1.32	3.01	2.04	3.01	4.29
Hs.119768	AA677025	454564	1.1472	1.9851	1.73	1.34	0.75	1.5	3.33	3.33	4.23
Hs.214059	T70437	67067	2.4878	3.9725	1.6	1.93	0.34	0.75	3.36	3.36	4.12
Hs.76669	T72235	85840	4.413	9.0786	2.06	4.86	1.24	1.01	1.12	4.86	4.11
Hs.102548	W03018	291363	0.1	0.1782	1.78	3.62	1.19	1.54	0.78	3.62	3.78
Hs.167330	R45008	34517	0.1	0.1146	1.15	0.01	3.77	0.45	0.35	3.77	3.77
Hs.99948	AA779480	1032431	0.3067	0.4382	1.43	0.27	3.46	0.95	1.04	3.46	3.64
Hs.21550	R40449	28611	0.1	0.1459	1.46	0.63	0.91	3.27	1.04	3.27	3.54
Hs.19641	AA625788	744905	2.3699	4.7555	2.01	1.42	1.97	3.1	1.53	3.1	3.52
Hs.48682	N62969	289742	0.203	0.3256	1.6	0.47	3.01	1.03	1.9	3.01	3.48
Hs.80206	R88192	166236	0.1	0.19	1.9	3.31	0.56	2.41	1.33	3.31	3.48
Hs.25793	R60717	42115	0.4525	0.529	1.17	0.3	3.73	0.44	0.2	3.73	3.43
Hs.184670	AA099251	489519	2.1756	4.8448	2.23	3.48	1.47	2.39	1.57	3.48	3.43

Table 3

Hs.143046	AA133194	490784	0.1	0.1744	1.74	1.34	0.84	3.61	1.19	3.61	3.35
Hs.50943	AA282983	713109	0.2102	0.4344	2.07	1.77	3.18	2.34	0.98	3.18	3.29
Hs.97179	AA491256	824260	1.2406	2.6374	2.13	0.86	1.55	2.3	3.8	3.8	3.28
Hs.218697	R92852	196824	2.019	3.8093	1.89	1.41	0.89	4.09	1.16	4.09	3.19
Hs.49725	AA397906	726508	0.2208	0.5126	2.32	0.96	2.67	2.33	3.33	3.33	3.18
Hs.27267	N53906	281597	0.5447	0.8686	1.59	3.06	1.38	0.98	0.96	3.06	3.14
Hs.12871	H05934	43461	0.8134	1.8803	2.31	2.07	0.97	3.68	2.52	3.68	3.05
Hs.81182	H53275	202577	0.6351	1.4327	2.26	4.77	0.58	1.93	1.74	4.77	3.05
Hs.36676	AA256461	682064	0.1114	0.1781	1.6	0.65	0.78	1.87	3.1	3.1	2.93
Hs.38270	AA481052	814661	0.1	0.1698	1.7	0.28	4.47	1.09	0.96	4.47	2.93
Hs.82733	AA478659	754093	0.3655	0.6544	1.79	3.02	1.03	1.84	1.27	3.02	2.92
Hs.95605	H04493	150176	1.08	1.6705	1.55	0.8	1.17	3.39	0.84	3.39	2.9
Hs.178576	AA487483	841633	4.9523	12.2778	2.48	3.64	2.88	2.1	1.3	3.64	2.88
Hs.180655	AA071235	531319	1.8303	4.5159	2.47	3.12	1.3	2.78	2.67	3.12	2.85
Hs.169946	H72474	214068	0.7761	1.0981	1.41	0.93	1	0.51	3.22	3.22	2.83
Hs.215223	H96643	251591	0.1	0.213	2.13	1.91	0.76	3.33	2.52	3.33	2.8
Hs.161	W48793	325182	0.8874	1.2819	1.44	3.04	0.87	1.03	0.84	3.04	2.79
Hs.29494	R78597	144905	0.7671	1.7162	2.24	3.25	2.84	1.19	1.68	3.25	2.79
Hs.153704	AA682321	462926	0.5461	1.2701	2.33	1.51	2.16	2.22	3.42	3.42	2.79
Hs.13528	W19519	303139	0.2833	0.7002	2.47	2.55	0.67	4.93	1.73	4.93	2.7
Hs.215670	W79382	346257	6.8028	14.7851	2.17	1.01	1.81	2.56	3.31	3.31	2.7
Hs.194327	R54444	39191	0.4742	0.6958	1.47	0.83	0.71	3.69	0.63	3.69	2.69
Hs.106869	AA463625	811828	0.1686	0.3532	2.09	1.36	0.9	1.87	4.25	4.25	2.67
Hs.40173	N36506	268476	0.3182	0.7706	2.42	3.68	1.47	2.61	1.93	3.68	2.64
Hs.122363	AA788641	1240283	0.5907	1.436	2.43	1.09	1.16	4.66	2.81	4.66	2.63
Hs.119178	AA427782	771133	0.1	0.1871	1.87	3.43	0.55	2.48	1.03	3.43	2.61
Hs.32659	AA457138	810459	0.1464	0.2484	1.7	1.35	1.2	1.1	3.13	3.13	2.57
Hs.91846	N90808	290162	0.7188	1.4892	2.07	1.27	1.94	3.15	1.94	3.15	2.54
Hs.107966	R95740	199180	1.7048	3.1766	1.86	1.8	1.09	1.04	3.52	3.52	2.51
Hs.141269	AA417900	752754	0.8573	2.4015	2.8	2.52	2.66	3.03	2.99	3.03	2.5
Hs.69360	AA400476	742798	0.4145	1.1013	2.66	2	0.89	4.92	2.82	4.92	2.49
Hs.6106	AA456271	811911	16.2162	28.0478	1.73	3.05	0.66	2.29	0.93	3.05	2.48
Hs.177584	R13381	28469	5.2184	9.9396	1.9	1.56	0.48	4.19	1.4	4.19	2.42
Hs.26765	N26928	257323	5.5501	8.2766	1.49	0.14	4.78	0.53	0.52	4.78	2.41
Hs.84461	AA425485	773073	0.7746	1.1339	1.46	0.56	3.12	0.75	1.42	3.12	2.4

Table 3

Hs.21368	H89637	240199	0.5732	1.2369	2.16	4.52	1.02	1.99	1.09	4.52	2.38
Hs.157236	AA436031	730554	27.1639	67.3585	2.48	1.25	2.3	2.72	3.66	3.66	2.34
Hs.24936	AA479402	754311	1.9129	3.6287	1.9	1.67	1.16	3.03	1.73	3.03	2.33
Hs.46677	H58234	204483	1.9744	5.4191	2.74	2.1	1.51	4.65	2.71	4.65	2.33
Hs.217518	W47363	324717	0.9992	2.5336	2.54	3.59	2.37	2.69	1.49	3.59	2.32
Hs.25933	AA411392	754628	0.6525	1.5853	2.43	1.82	1.27	2.48	4.14	4.14	2.32
Hs.102419	AA033532	471200	0.1	0.1505	1.5	3.74	0.11	1.42	0.75	3.74	2.3
Hs.6654	AA456035	812170	0.1021	0.2077	2.03	3	2.3	1.09	1.74	3	2.29
Hs.108642	R37224	137638	1.9315	4.3004	2.23	3.62	1.58	1.79	1.91	3.62	2.29
Hs.218404	AA402352	741067	32.582	45.8235	1.41	0.35	4.01	0.49	0.78	4.01	2.29
Hs.85226	AA630104	854701	4.777	12.3794	2.59	4.19	1.29	2.52	2.37	4.19	2.29
Hs.32454	AA452336	786525	0.373	0.8115	2.18	1.05	1.87	1.34	4.44	4.44	2.29
Hs.173493	AA045508	487297	0.6112	1.5532	2.54	4.23	1.38	2.74	1.82	4.23	2.25
Hs.16232	AA459507	810890	0.2306	0.643	2.79	4.48	2.86	1.96	1.86	4.48	2.24
Hs.42189	N24805	269733	0.8596	1.6136	1.88	3.54	0.44	2.21	1.32	3.54	2.22
Hs.22383	R35500	37385	0.7319	1.9707	2.69	4.81	2.38	1.98	1.6	4.81	2.22
Hs.191356	W76286	345525	2.4217	5.4931	2.27	3.75	1.47	2.59	1.26	3.75	2.2
Hs.217307	AA458994	814270	1.4031	2.2074	1.57	0.87	3.24	1.29	0.89	3.24	2.2
Hs.33439	R87650	194607	1.6109	2.4219	1.5	0.7	3.13	0.85	1.33	3.13	2.17
Hs.191135	T91244	112559	0.1877	0.3867	2.06	0.88	3.65	1.39	2.32	3.65	2.11
Hs.118780	AA442352	758206	0.7507	1.6003	2.13	1.72	0.97	2.31	3.53	3.53	2.11
Hs.93526	AA465228	814224	6.6185	12.6015	1.9	1.02	1.58	3.12	1.9	3.12	2.09
Hs.46812	N48075	281733	0.3694	0.9785	2.65	1.26	2.49	3.91	2.93	3.91	2.09
Hs.207776	N51521	281476	2.0586	3.5521	1.73	3.18	0.3	2.17	1.25	3.18	2.09
Hs.23016	N53172	246786	0.8126	2.0525	2.53	3.64	2.23	2.97	1.26	3.64	2.09
Hs.8078	R93715	197765	2.232	4.503	2.02	1.16	0.7	3.85	2.37	3.85	2.07
Hs.19015	AA479259	753946	3.1895	8.6536	2.71	4.64	1.57	2.26	2.38	4.64	2.05
Hs.195184	AA459106	814303	8.127	19.3733	2.38	2.3	1.98	1.99	3.26	3.26	2.02
Hs.3068	AA459632	810974	1.3114	2.9647	2.26	1.49	0.95	4.17	2.42	4.17	2
Hs.31293	H14986	48661	1.1045	2.2587	2.04	1.04	3.12	1.5	2.52	3.12	1.98
Hs.216272	AA133721	512116	3.263	9.4539	2.9	4.22	2.18	2.93	2.26	4.22	1.96
Hs.108994	N26083	268979	0.2997	0.5967	1.99	1.62	1.18	1.72	3.44	3.44	1.96
Hs.117099	AA678024	431808	0.458	0.6189	1.35	0.32	3.79	0.6	0.69	3.79	1.96
Hs.218871	W46964	325033	0.3831	0.6221	1.62	1.34	3.1	1.04	1.02	3.1	1.93
Hs.55220	AA418951	768008	0.3977	1.1374	2.86	4.03	2.1	2.54	2.77	4.03	1.93

Table 3

Hs.171088	H05777	43936	0.5596	0.8406	1.5	1.05	0.65	3.08	1.23	3.08	1.91
Hs.108881	AA460520	796606	2.9034	6.0533	2.08	0.73	1.18	3.89	2.54	3.89	1.91
Hs.17932	T96935	121154	2.1955	4.7899	2.18	1.71	1.08	2.25	3.69	3.69	1.9
Hs.154443	AA485983	843049	0.2002	0.4353	2.17	2.29	1.49	1.9	3.02	3.02	1.9
Hs.31797	H49751	178860	0.914	1.0926	1.2	0.18	4.14	0.17	0.29	4.14	1.9
Hs.172639	AA679314	432115	1.0134	2.3346	2.3	2.24	1.39	2.08	3.51	3.51	1.9
Hs.197298	AA486796	841226	6.4625	13.0988	2.03	1.3	1.97	4.09	0.75	4.09	1.89
Hs.219780	T74394	84560	1.2305	2.4648	2	2.15	0.98	1.15	3.73	3.73	1.89
Hs.21288	AA452824	788558	0.7999	1.357	1.7	0.67	3.88	0.64	1.6	3.88	1.89
Hs.77666	R17165	31914	0.9768	2.1728	2.22	1.87	0.51	4.39	2.12	4.39	1.89
Hs.214806	R69117	142067	2.1726	5.8638	2.7	2.93	0.71	2.32	4.84	4.84	1.88
Hs.18920	AA481597	815276	4.9727	13.9041	2.8	2.64	1.22	2.34	4.99	4.99	1.87
Hs.12457	R16157	53265	1.6119	2.964	1.84	0.63	1.24	3.51	1.98	3.51	1.86
Hs.112184	AA707004	451364	0.4227	0.9945	2.35	1.24	1.3	2.85	4.02	4.02	1.83
Hs.22587	H08595	46091	1.0036	1.9461	1.94	0.72	1.22	4.49	1.33	4.49	1.83
Hs.169222	H93373	241818	0.48	0.777	1.62	0.95	3.57	1.25	0.71	3.57	1.81
Hs.33905	AA495819	768395	5.121	11.2466	2.2	2.04	0.92	3.11	2.72	3.11	1.81
Hs.213504	T81289	25061	3.5028	8.7736	2.5	2.62	1.49	2.83	3.09	3.09	1.81
Hs.190693	N31806	267135	0.4369	1.0555	2.42	1.82	0.9	4.46	2.48	4.46	1.8
Hs.72451	AA160484	592523	0.1157	0.1978	1.71	3.26	0.19	1.41	1.98	3.26	1.8
Hs.219986	AA045385	487117	0.433	1.1637	2.69	2.8	0.77	4.89	2.29	4.89	1.79
Hs.31532	AA704615	450781	2.7148	6.6298	2.44	3.93	0.63	2.49	2.72	3.93	1.79
Hs.184043	N39426	276871	0.1	0.2007	2.01	3.06	0.98	2.96	1.02	3.06	1.78
Hs.30343	H02837	151477	0.7281	1.4002	1.92	3.69	2.29	0.98	0.73	3.69	1.77
Hs.28298	AA481100	814662	2.0883	3.7055	1.77	0.63	1.42	3.56	1.49	3.56	1.77
Hs.21056	AA454776	809755	1.048	2.728	2.6	1.86	1.99	3.88	2.67	3.88	1.77
Hs.64641	W39160	305581	3.2902	8.9	2.71	2.87	1.72	4.03	2.21	4.03	1.76
Hs.38783	AA844447	1390860	2.7908	5.4774	1.96	0.61	1.21	3.15	2.88	3.15	1.76
Hs.149098	AA449289	785459	0.138	0.2732	1.98	3	0.83	2.34	1.75	3	1.75
Hs.102947	AA479063	754033	0.4302	0.9718	2.26	1.49	1.54	4.2	1.8	4.2	1.75
Hs.32062	N52980	244205	3.4907	6.181	1.77	0.94	1.15	3.08	1.92	3.08	1.74
Hs.203772	R59833	42893	1.3076	2.0035	1.53	0.59	3.03	0.96	1.54	3.03	1.73
Hs.54652	N90744	302766	1.5324	3.0341	1.98	1.08	1.14	2.59	3.11	3.11	1.73
Hs.98102	AA626698	745138	32.7914	85.3289	2.6	2.83	1.03	3.97	2.58	3.97	1.71
Hs.103238	W90519	417908	1.003	1.8575	1.85	1.38	1	3.01	2.02	3.01	1.71

Table 3

Hs.82085	AA233643	666172	2.0006	5.1572	2.58	4.57	2.37	1.19	2.18	4.57	1.7
Hs.2280	AA125915	502690	1.8169	3.6672	2.02	1.89	1.29	1.79	3.11	3.11	1.7
Hs.103834	T96718	121251	13.4091	24.5637	1.83	3.12	0.67	0.75	2.78	3.12	1.69
Hs.219979	AA452348	786550	0.3766	0.7264	1.93	3.34	1.12	1.67	1.58	3.34	1.69
Hs.71528	AA134595	502531	0.7154	1.4274	2	4.09	0.81	2.16	0.92	4.09	1.69
Hs.219465	AA437370	770346	1.0026	2.0396	2.03	3.63	1.14	1.57	1.81	3.63	1.68
Hs.98209	AA421533	731154	0.263	0.7169	2.73	3.54	2.02	2.8	2.54	3.54	1.67
Hs.193268	R89260	195736	1.4169	3.1841	2.25	2.04	1.31	2.57	3.06	3.06	1.67
Hs.218676	R43755	34942	0.4998	0.719	1.44	0.95	3.09	0.69	1.03	3.09	1.67
Hs.58927	W86860	416390	1.6403	4.1474	2.53	2.02	1.41	3.95	2.73	3.95	1.67
Hs.88746	AA280288	712216	0.2508	0.4464	1.78	1.2	3.85	1.3	0.76	3.85	1.66
Hs.23856	R25389	133158	1.4262	3.1352	2.2	1.54	1.22	3.31	2.72	3.31	1.66
Hs.9061	T49801	68636	0.1	0.251	2.51	1.68	1.96	2.98	3.42	3.42	1.65
Hs.33384	N49883	243638	0.9263	1.6837	1.82	0.82	2.06	1.26	3.14	3.14	1.64
Hs.54037	N51740	281737	0.7654	1.3091	1.71	3.81	1.3	1.22	0.52	3.81	1.63
Hs.22857	N30747	257960	3.405	8.1226	2.39	3.63	1.92	2.49	1.5	3.63	1.63
Hs.58617	R94947	198607	0.2485	0.6377	2.57	2.44	1.31	2.55	3.97	3.97	1.62
Hs.117596	H71703	213564	4.8109	9.2873	1.93	3.42	0.49	2.12	1.69	3.42	1.62
Hs.214296	AA702185	448193	3.4973	8.2949	2.37	3.66	1.44	2.46	1.93	3.66	1.61
Hs.17731	AA449357	785733	1.6987	3.0317	1.78	0.91	1.49	1.55	3.18	3.18	1.6
Hs.191153	N68001	290529	3.2112	5.2774	1.64	0.48	1.64	1.25	3.2	3.2	1.59
Hs.80296	AA452966	788566	4.5336	9.7994	2.16	2.33	1.1	3.02	2.21	3.02	1.59
Hs.28728	R26344	133085	0.1	0.1621	1.62	0.75	1.07	3.59	1.07	3.59	1.58
Hs.215224	AA489007	824753	1.7888	3.9542	2.21	1.7	1	2.23	3.9	3.9	1.57
Hs.137555	R02739	123666	8.8043	18.6722	2.12	1.46	0.66	4.18	2.19	4.18	1.57
Hs.199153	R35230	136744	4.5057	10.5294	2.34	3.09	1.31	2.56	2.39	3.09	1.56
Hs.181345	N73827	296529	2.1008	3.5386	1.68	0.99	1.19	3.46	1.1	3.46	1.56
Hs.10593	R42934	32343	0.1	0.1122	1.12	0.68	3.21	0.37	0.23	3.21	1.56
Hs.219961	AA190993	627039	0.8627	1.808	2.1	3.69	1.17	2.27	1.26	3.69	1.56
Hs.153820	AA682848	450301	1.0833	2.3599	2.18	3.3	1.15	1.75	2.52	3.3	1.55
Hs.31971	AA434160	770593	0.1	0.2558	2.56	4.5	1.74	1.63	2.37	4.5	1.55
Hs.49881	AA044307	486394	1.3117	2.7955	2.13	4.27	1.04	1.93	1.28	4.27	1.54
Hs.70186	R21511	130153	1.8488	2.9854	1.61	0.53	3.39	0.79	1.75	3.39	1.54
Hs.117687	H28256	162654	1.1625	1.6541	1.42	0.7	0.43	0.59	3.96	3.96	1.53
Hs.327	AA442290	757440	0.1	0.1669	1.67	1.08	4.15	1.16	0.29	4.15	1.52

Table 3

Hs.184584	AA701655	433573	7.285	13.6716	1.88	0.59	1.18	2.24	3.5	3.5	1.52
Hs.13351	R59681	42123	3.2521	6.9669	2.14	2.3	0.43	4.05	1.8	4.05	1.52
Hs.9392	T52152	71902	0.8035	1.7088	2.13	1.7	0.93	3.01	2.86	3.01	1.52
Hs.50151	W37112	321834	0.5138	1.1497	2.24	3.4	1.32	2.54	1.7	3.4	1.52
Hs.22073	R16957	129725	5.3287	10.4926	1.97	3.02	0.5	2.29	2.06	3.02	1.51
Hs.190091	AA621184	744362	2.5095	5.5132	2.2	1.83	0.79	4.25	1.91	4.25	1.51
Hs.55144	N95435	309929	0.2618	0.6066	2.32	3.27	2.16	2.1	1.74	3.27	1.51
Hs.155049	AA757417	395417	1.2516	1.8716	1.5	0.72	3.15	0.95	1.16	3.15	1.51
Hs.74497	H91845	221212	1.0507	1.5099	1.44	0.59	3.17	0.97	1.02	3.17	1.51
Hs.219425	N98412	293925	22.4989	48.956	2.18	3.92	1.56	1.73	1.5	3.92	1.51
Hs.180789	T71578	85224	6.8053	10.7187	1.58	0.48	4.67	0.5	0.65	4.67	1.51
Hs.25121	R49568	38356	0.1	0.1237	1.24	0.01	0.73	0.71	3.5	3.5	1.51
Hs.99120	W37634	321885	1.7267	3.3618	1.95	1.39	1.22	3.6	1.58	3.6	1.5
Hs.189136	R99831	201045	0.1001	0.192	1.92	0.69	4.41	1.37	1.2	4.41	1.5
Hs.22216	W96146	358543	1.4775	3.4403	2.33	2.01	1.39	2.51	3.4	3.4	1.49
Hs.217030	AA398352	726846	3.961	8.3763	2.11	0.63	2.79	1.27	3.76	3.76	1.49
Hs.5894	W84584	415795	0.2448	0.4895	2	0.84	3.47	2.13	1.56	3.47	1.49
Hs.214741	H75703	233071	0.8214	1.7644	2.15	3.96	1.78	1.49	1.36	3.96	1.49
Hs.98102	AA426374	757489	0.8242	2.222	2.7	2.34	1.13	4.32	2.99	4.32	1.48
Hs.220326	H38848	190692	0.143	0.3253	2.27	0.97	1.79	2.93	3.41	3.41	1.47
Hs.30627	N50976	281190	1.0908	2.8246	2.59	4.73	0.85	1.94	2.83	4.73	1.47
Hs.75188	AA039639	376316	2.3038	6.5011	2.82	3.56	2.61	2.82	2.29	3.56	1.47
Hs.54639	N90598	306269	0.1422	0.3157	2.22	0.84	4.37	1.32	2.35	4.37	1.47
Hs.24740	R34314	136431	2.1301	3.6152	1.7	1.16	1.21	1.15	3.27	3.27	1.47
Hs.75093	AA476240	771323	0.8796	1.8509	2.1	3.93	1.4	1.32	1.76	3.93	1.46
Hs.1257	AA857163	1410444	0.1064	0.2194	2.06	1.46	0.69	2.56	3.53	3.53	1.45
Hs.46642	N49619	277785	0.2508	0.4101	1.64	3	1	1.65	0.89	3	1.45
Hs.24529	R76749	143919	0.972	2.2242	2.29	1.7	1.7	3.46	2.3	3.46	1.44
Hs.194964	R35283	37234	0.1	0.16	1.6	0.48	1.07	1.06	3.8	3.8	1.44
Hs.20725	AA459627	810962	0.3823	0.7817	2.04	1.26	0.91	2.46	3.55	3.55	1.44
Hs.184465	AA485877	840467	2.3153	5.1039	2.2	1.36	4.05	1.32	2.08	4.05	1.43
Hs.203839	R54590	40100	0.5593	0.8582	1.53	0.07	0.36	0.81	4.9	4.9	1.43
Hs.75113	AA459880	796388	0.5901	1.3337	2.26	3.71	1.19	2.36	1.78	3.71	1.43
Hs.191290	T98628	122183	0.161	0.337	2.09	3.99	1.51	1.46	1.41	3.99	1.43
Hs.28309	R62288	139835	0.819	1.0993	1.34	0.59	0.88	0.72	3.18	3.18	1.42

Table 3

Hs.4210	N40968	279824	0.5159	1.3544	2.63	1.74	1.75	2.89	4.11	4.11	1.42
Hs.215558	AA159669	593223	55.6499	154.0554	2.77	4.89	0.89	2.47	2.83	4.89	1.42
Hs.16003	AA429422	773599	7.3999	18.1004	2.45	1.96	1.37	3.49	2.96	3.49	1.41
Hs.12553	R39258	23514	0.7995	1.8977	2.37	4.13	0.95	2.7	1.72	4.13	1.41
Hs.81454	R17157	32010	0.8326	1.1174	1.34	0.9	3.19	0.63	0.66	3.19	1.41
Hs.217510	H50656	194305	0.2849	0.4992	1.75	1.12	0.76	2.05	3.08	3.08	1.41
Hs.82502	AA504204	825265	1.9857	5.3721	2.71	2.44	2.3	3.7	2.38	3.7	1.41
Hs.99014	AA485810	811116	0.8988	2.2349	2.49	2.86	1.21	3.11	2.77	3.11	1.41
Hs.291	AA099910	489839	0.2628	0.6017	2.29	2.94	1.57	3.12	1.53	3.12	1.41
Hs.32500	H08029	45376	7.6333	10.9191	1.43	3.15	0.92	1.2	0.45	3.15	1.4
Hs.213995	AA775259	878600	2.4912	5.1848	2.08	1.57	1.23	2.38	3.14	3.14	1.4
Hs.4815	N33851	272468	16.5376	36.3583	2.2	1.53	1.09	3.23	2.95	3.23	1.4
Hs.42397	AA151210	504982	0.3538	0.724	2.05	3.01	2.09	1.74	1.34	3.01	1.4
Hs.155140	T98414	122091	2.9423	5.1904	1.76	1.24	0.96	3.28	1.57	3.28	1.4
Hs.42355	AA455976	812041	0.3305	0.7739	2.34	2.86	1.74	3.67	1.09	3.67	1.39
Hs.44243	AA011427	429519	1.2502	3.0096	2.41	3.05	1.42	2.86	2.3	3.05	1.39
Hs.167740	N95680	293964	19.9531	45.9743	2.3	1.44	2.13	3.09	2.56	3.09	1.39
Hs.27258	W87541	416981	1.5406	4.0649	2.64	1.87	2.09	3.79	2.8	3.79	1.39
Hs.54613	W37075	302637	1.555	3.2358	2.08	1.46	0.94	2.53	3.39	3.39	1.39
Hs.29759	AA456184	809473	4.322	7.7237	1.79	1.02	3.56	1.03	1.54	3.56	1.38
Hs.23766	R61187	42330	0.9927	1.7245	1.74	0.6	2.13	1.19	3.03	3.03	1.38
Hs.214500	AA489606	897557	2.6944	5.9273	2.2	1.45	1.85	3.25	2.25	3.25	1.38
Hs.50282	N73499	295857	2.2995	4.4363	1.93	3.51	0.87	1.56	1.77	3.51	1.38
Hs.62041	AA709414	506369	3.4487	8.4401	2.45	2.1	2.03	1.89	3.78	3.78	1.38
Hs.130699	AA621478	1055278	0.4588	0.9281	2.02	1.83	0.87	3.61	1.77	3.61	1.38
Hs.31297	AA457501	838446	3.0185	6.6982	2.22	2.31	0.83	2.07	3.67	3.67	1.38
Hs.34871	AA490798	824109	0.7311	1.5889	2.17	4.43	1.71	1.45	1.11	4.43	1.38
Hs.2003	N91921	306841	2.6356	5.2299	1.98	3.47	1.53	1.98	0.95	3.47	1.38
Hs.107057	R33152	136180	2.0174	4.3775	2.17	1.71	1.12	3.03	2.82	3.03	1.37
Hs.40782	AA417956	767706	3.2308	5.2285	1.62	1	0.5	3.84	1.13	3.84	1.37
Hs.83429	R68669	139226	10.2802	23.1937	2.26	3.19	2.16	1.58	2.09	3.19	1.37
Hs.99474	AA458501	809619	0.1478	0.3617	2.45	3.85	1.34	2.55	2.05	3.85	1.37
Hs.18627	AA489311	842851	5.4332	13.2355	2.44	4.02	1.06	2.47	2.19	4.02	1.37
Hs.98127	N45525	279340	1.4739	1.962	1.33	0.91	0.55	3.29	0.58	3.29	1.37
Hs.158419	R92602	196259	2.2236	4.4439	2	1.17	0.94	2.76	3.12	3.12	1.37

Table 3

Hs.180552	AA600192	949944	14.0656	31.5664	2.24	2.15	0.94	2.6	3.28	3.28	1.36
Hs.13476	AA424684	767188	2.004	4.897	2.44	2.48	1.54	2.51	3.24	3.24	1.36
Hs.35225	AA460149	795871	0.4586	0.9336	2.04	1.39	0.96	2.42	3.38	3.38	1.36
Hs.181307	AA004671	428796	0.1	0.1721	1.72	1.47	1.56	3.2	0.66	3.2	1.36
Hs.30343	R63129	137984	0.1388	0.4007	2.89	4.8	2.53	2.87	1.34	4.8	1.36
Hs.118722	AA192527	627541	0.554	1.2412	2.24	4.12	1.13	2.32	1.39	4.12	1.36
Hs.8850	H78537	233688	0.6238	1.178	1.89	3.43	1.53	1.53	1.07	3.43	1.36
Hs.42915	AA705112	462595	0.2895	0.5098	1.76	0.92	3.77	0.98	1.38	3.77	1.36
Hs.35014	W92779	418351	0.125	0.1888	1.51	3.26	0.66	1.17	0.95	3.26	1.35
Hs.169674	T68333	83297	0.854	2.006	2.35	1.58	1.16	1.77	4.89	4.89	1.34
Hs.7874	AA115244	501407	1.1604	2.1156	1.82	1.32	0.47	3.17	2.33	3.17	1.34
Hs.98471	AA424913	768239	0.255	0.5817	2.28	1.88	1.74	2.24	3.27	3.27	1.34
Hs.40539	AA279100	703838	0.1	0.1608	1.61	0.84	3.84	1.18	0.58	3.84	1.34
Hs.25085	R36081	136802	0.835	1.5397	1.84	1.65	0.66	3.19	1.87	3.19	1.33
Hs.161110	N44889	271863	0.323	0.6719	2.08	0.54	2.13	2.19	3.46	3.46	1.33
Hs.34806	AA478880	754126	0.542	1.425	2.63	4.41	1.22	2.84	2.05	4.41	1.33
Hs.218364	AA495893	768356	1.3142	3.4743	2.64	2.88	1.1	2.6	3.99	3.99	1.33
Hs.214103	W60845	341805	0.8452	1.9125	2.26	1.89	0.58	4.8	1.78	4.8	1.33
Hs.30443	R97502	199305	1.9738	3.4597	1.75	1.33	0.84	3.04	1.79	3.04	1.33
Hs.76136	AA431967	782193	0.6634	1.5922	2.4	3.82	1.92	1.38	2.48	3.82	1.32
Hs.55609	W37993	322218	0.7784	1.505	1.93	1.68	0.67	3.45	1.94	3.45	1.32
Hs.1183	AA759046	1321598	0.1501	0.3229	2.15	1.14	3.86	1.39	2.22	3.86	1.32
Hs.99836	AA490486	823887	1.0515	1.8906	1.8	1.3	0.77	2	3.12	3.12	1.32
Hs.154248	AA487632	841328	4.2536	7.1027	1.67	3.7	0.64	1.4	0.93	3.7	1.32
Hs.182628	AA477008	739625	14.4966	23.352	1.61	3.08	0.64	1.28	1.44	3.08	1.32
Hs.31086	H73817	214443	13.5983	38.8058	2.85	2.77	2.18	3.54	2.93	3.54	1.32
Hs.71592	AA135748	501651	0.5069	0.8025	1.58	0.76	1.23	1.26	3.08	3.08	1.32
Hs.35086	AA099033	489595	0.1	0.265	2.65	1.99	2.55	3.68	2.38	3.68	1.32
Hs.44566	AA088359	511091	8.4963	18.7133	2.2	0.9	2.91	1.53	3.48	3.48	1.31
Hs.55915	W44508	323611	0.7577	1.6449	2.17	3.31	1.14	2.48	1.75	3.31	1.31
Hs.48391	AA287122	701819	2.8796	6.3873	2.22	1.66	1.39	2.49	3.33	3.33	1.31
Hs.22970	R44327	34597	1.7494	3.7859	2.16	1.56	0.92	1.87	4.3	4.3	1.31
Hs.191757	AA460669	796227	0.7392	1.6076	2.17	3.24	0.85	2.12	2.48	3.24	1.3
Hs.151134	AA598582	897835	6.2367	11.1626	1.79	4.27	1.07	0.61	1.21	4.27	1.3
Hs.219764	AA490627	811954	1.0965	2.8453	2.59	2.99	1.29	3.5	2.61	3.5	1.3

Table 3

Hs.191672	AA490483	823881	1.3848	3.0283	2.19	1.7	1.08	3.27	2.7	3.27	1.3
Hs.192516	W92399	359038	0.4438	1.0574	2.38	4.51	1	2.3	1.71	4.51	1.3
Hs.74294	AA102646	563673	0.4913	1.1017	2.24	1.78	0.95	3.76	2.48	3.76	1.3
Hs.76828	AA878391	1416502	0.2503	0.4986	1.99	0.74	1.51	1.33	4.39	4.39	1.29
Hs.193205	W85781	416039	2.2252	5.6826	2.55	2.94	0.59	2.84	3.85	3.85	1.29
Hs.204164	W37447	321900	0.4697	0.806	1.72	0.65	1.51	1.23	3.47	3.47	1.29
Hs.175511	AA258057	703383	1.5753	3.1476	2	1	1.19	2.51	3.28	3.28	1.29
Hs.30524	H10761	47169	1.5516	2.7274	1.76	3.55	0.91	1.64	0.93	3.55	1.29
Hs.214340	N51226	282895	1.9808	4.7797	2.41	1.1	3.88	1.98	2.69	3.88	1.29
Hs.167460	H22346	173554	15.9593	42.7253	2.68	2.83	2.14	3.13	2.6	3.13	1.29
Hs.31562	H18335	171753	0.2249	0.4335	1.93	1.16	3.39	1.44	1.72	3.39	1.29
Hs.118684	R24974	35191	10.7843	24.2598	2.25	3.09	1.16	2	2.75	3.09	1.29
Hs.215076	N93236	308726	5.3432	11.2484	2.11	0.7	0.85	4.26	2.61	4.26	1.29
Hs.118494	AA677947	431783	0.917	1.6533	1.8	0.99	0.94	3.12	2.16	3.12	1.29
Hs.215110	N51837	281868	1.6841	3.287	1.95	3.05	1.14	2.06	1.56	3.05	1.28
Hs.117112	AA705692	435161	0.4044	0.5991	1.48	3.55	0.72	0.85	0.8	3.55	1.28
Hs.148495	AA450227	789232	6.9673	19.8535	2.85	2.27	1.73	4.65	2.75	4.65	1.28
Hs.37744	AA010748	359701	0.2461	0.5278	2.14	1.53	1.39	2.33	3.33	3.33	1.28
Hs.155012	AA465616	814779	4.316	8.2912	1.92	1.16	1.85	3.18	1.49	3.18	1.28
Hs.70337	N51362	283191	0.2217	0.426	1.92	1.12	3.57	1.8	1.19	3.57	1.28
Hs.79732	AA134871	502367	5.3739	12.1747	2.27	1.81	0.73	2.36	4.17	4.17	1.28
Hs.78902	AA857093	1434908	0.1046	0.2325	2.22	3.14	0.87	2.92	1.96	3.14	1.28
Hs.158195	AA250730	669443	1.461	3.4937	2.39	2.15	1.62	3.9	1.9	3.9	1.28
Hs.1634	R09062	127510	0.9852	2.3043	2.34	4.14	1.07	2.76	1.38	4.14	1.28
Hs.217429	N66068	293985	0.1492	0.3727	2.5	1.69	2.15	2.46	3.7	3.7	1.28
Hs.77929	H20908	51666	1.3291	2.6944	2.03	1.86	1.09	1.5	3.65	3.65	1.27
Hs.173051	AA504262	825408	1.3363	2.2467	1.68	3.04	0.67	1.2	1.82	3.04	1.27
Hs.31704	AA677016	454538	4.1423	10.1959	2.46	2.87	1.51	3.33	2.14	3.33	1.27
Hs.214397	AA459702	795585	0.1	0.1798	1.8	1.42	3.6	0.88	1.3	3.6	1.27
Hs.215735	W94714	358885	1.1115	2.5057	2.25	1.66	3.26	2.9	1.19	3.26	1.27
Hs.173577	AA045664	489213	0.6931	1.4015	2.02	3.07	1.42	1.45	2.14	3.07	1.27
Hs.63795	T82022	110307	1.4938	2.3372	1.56	0.93	0.76	3.24	1.33	3.24	1.27
Hs.26358	N20003	263341	0.6864	1.8622	2.71	4.87	1.84	2.37	1.77	4.87	1.27
Hs.184642	W86214	415868	1.0378	1.4652	1.41	0.92	3.02	0.75	0.95	3.02	1.27
Hs.188610	N54512	244896	0.3116	0.6221	2	3.26	1.35	2.3	1.07	3.26	1.27

Table 3

Hs.17481	AA428099	773446	2.2136	3.1936	1.44	0.4	3.17	1.1	1.1	3.17	1.26
Hs.2450	H19853	172495	0.868	1.9254	2.22	2.38	0.8	3.05	2.65	3.05	1.26
Hs.22405	H54023	202897	0.8421	1.4396	1.71	3.41	1.41	1.03	0.99	3.41	1.26
Hs.26173	R41943	31225	4.6804	10.4588	2.23	3.04	1.47	2.07	2.36	3.04	1.26
Hs.193476	AA460831	796255	2.7928	6.2802	2.25	2.76	0.86	3	2.38	3	1.26
Hs.7007	H16751	50219	1.4771	3.3346	2.26	2.53	1.16	3.16	2.18	3.16	1.25
Hs.21842	R40105	30082	0.4246	1.009	2.38	2.89	0.57	2.69	3.35	3.35	1.25
Hs.42380	N59377	290082	0.6548	1.2054	1.84	4.8	0.52	1.26	0.79	4.8	1.25
Hs.155924	AA453347	789383	1.8665	4.7891	2.57	4.56	1.9	2.03	1.78	4.56	1.25
Hs.112799	AA610000	1031991	0.5226	0.7574	1.45	0.77	3.82	0.41	0.8	3.82	1.25
Hs.182196	AA142869	504396	0.2723	0.5185	1.9	0.47	3.04	2.16	1.94	3.04	1.25
Hs.214180	AA465444	814101	1.3759	2.4185	1.76	1.86	0.83	3.2	1.14	3.2	1.25
Hs.44450	W32135	320763	0.8122	1.8941	2.33	1.82	1.36	2	4.15	4.15	1.25
Hs.215104	N32045	260118	0.2721	0.4994	1.84	1.2	0.83	4.13	1.18	4.13	1.24
Hs.54642	AA425500	773260	11.0748	26.7745	2.42	2.51	1.65	3.27	2.23	3.27	1.24
Hs.4158	AA844864	1412300	0.539	0.6899	1.28	0.39	3.36	0.69	0.67	3.36	1.24
Hs.122730	T95333	120749	1.8697	5.4853	2.93	2.65	2.09	4.45	2.54	4.45	1.24
Hs.150390	AA001835	427980	0.4908	1.0561	2.15	1.69	0.66	3.44	2.82	3.44	1.24
Hs.216944	AA417946	767441	1.1649	3.0994	2.66	2.15	1.51	4.06	2.93	4.06	1.24
Hs.208308	N71796	290749	0.2061	0.318	1.54	0.75	0.97	3.4	1.04	3.4	1.23
Hs.99807	AA489023	824913	0.5363	1.1488	2.14	1.69	1.91	3.14	1.82	3.14	1.23
Hs.76359	N54994	245388	0.5312	1.3654	2.57	4.63	0.8	2.51	2.33	4.63	1.23
Hs.214309	R42168	30466	1.4707	3.0473	2.07	1.76	1.54	3.42	1.57	3.42	1.23
Hs.186879	R42174	30473	7.196	18.3494	2.55	2.6	2.33	4.09	1.18	4.09	1.23
Hs.15032	AA495804	768381	0.4736	1.0115	2.14	1.21	1.67	2.23	3.42	3.42	1.23
Hs.129132	AA131315	567055	0.4778	0.9894	2.07	1.35	2.43	1.49	3.01	3.01	1.23
Hs.95229	AA450350	785535	1.9285	4.7046	2.44	1.94	1.61	4.05	2.16	4.05	1.23
Hs.62711	AA056474	509462	1.9854	5.1808	2.61	2.64	1.27	2.62	3.91	3.91	1.22
Hs.92202	R68581	137890	0.8316	1.9401	2.33	1.61	2.62	1.92	3.19	3.19	1.22
Hs.98647	AA430040	781106	1.0514	2.5101	2.39	1.31	2.7	1.9	3.64	3.64	1.22
Hs.12929	AA400592	743322	1.6899	3.6062	2.13	2.41	1.29	3.05	1.79	3.05	1.22
Hs.172052	AA732873	1343971	0.58	1.4231	2.45	1.61	2.38	2.27	3.55	3.55	1.22
Hs.60451	AA011281	359837	0.7081	1.8001	2.54	4.99	1.02	2.67	1.49	4.99	1.22
Hs.8888	W57698	340974	0.104	0.221	2.12	0.7	1.92	4.16	1.71	4.16	1.22
Hs.199041	AA156793	502333	1.2246	2.286	1.87	0.66	1.42	2.08	3.31	3.31	1.21

Table 3

Hs.216191	AA280203	712230	0.2287	0.5624	2.46	1.86	1.81	3.47	2.69	3.47	1.21
Hs.193716	T66824	66327	2.5922	6.0237	2.32	1.86	1.08	3.63	2.73	3.63	1.21
Hs.10494	AA134862	502436	0.2122	0.3378	1.59	1.06	0.93	1.14	3.23	3.23	1.21
Hs.154248	R93255	275642	0.6278	1.5199	2.42	3.35	1.03	2.77	2.54	3.35	1.21
Hs.25092	R36207	136856	2.6268	5.0281	1.91	3.54	1.15	1.57	1.39	3.54	1.21
Hs.184340	N44278	273048	1.6168	4.0021	2.48	1.93	0.99	2.93	4.05	4.05	1.21
Hs.86998	AA479997	753973	10.7702	25.3884	2.36	2.09	3.02	1.88	2.44	3.02	1.2
Hs.170311	AA452345	786544	3.1623	8.0217	2.54	1.52	2.16	3.86	2.61	3.86	1.2
Hs.6126	AA464623	812989	3.258	7.7063	2.37	2.61	1.2	3.34	2.3	3.34	1.2
Hs.91773	AA599092	950445	17.5613	37.87	2.16	1.89	1.45	3.35	1.94	3.35	1.2
Hs.201591	N54728	283196	1.1944	2.2786	1.91	1.64	1.17	4.18	0.64	4.18	1.2
Hs.53631	AA485896	840503	0.3513	0.8736	2.49	0.97	4.87	1.8	2.3	4.87	1.2
Hs.109653	N91175	301842	5.1548	13.1999	2.56	1.8	1.8	3.73	2.91	3.73	1.2
Hs.46476	N45114	282884	0.8973	1.3037	1.45	3.05	1.23	1.07	0.46	3.05	1.2
Hs.108824	H97880	251330	12.4111	25.9716	2.09	3.99	0.7	2.2	1.48	3.99	1.2
Hs.2384	AA459100	814306	6.4058	13.3329	2.08	1.4	1.51	3.18	2.23	3.18	1.19
Hs.219229	W52272	325365	0.8671	1.8855	2.17	4.48	1.12	1.89	1.2	4.48	1.19
Hs.184446	AA485449	811059	0.2506	0.6398	2.55	2.41	2.92	1.48	3.4	3.4	1.19
Hs.47860	N63949	289428	2.5101	4.1304	1.65	4.63	0.57	0.9	0.48	4.63	1.19
Hs.25640	AA434144	770579	0.1283	0.2031	1.58	3.96	0.87	0.9	0.6	3.96	1.19
Hs.180034	AA700556	432651	1.4703	4.1604	2.83	2.3	2.03	4.49	2.49	4.49	1.19
Hs.99739	AA458943	814427	0.2572	0.5702	2.22	3.63	1.76	2.07	1.41	3.63	1.19
Hs.218502	H38263	190950	0.1495	0.3525	2.36	3.05	1.7	2.39	2.29	3.05	1.18
Hs.119054	AA704323	451055	1.8349	3.8215	2.08	1.58	1.23	3.37	2.15	3.37	1.18
Hs.6879	AA181314	624390	7.9621	19.206	2.41	4.08	1.03	2.36	2.17	4.08	1.18
Hs.215704	AA937108	1340595	6.9453	10.2832	1.48	0.38	3.02	0.67	1.85	3.02	1.18
Hs.23027	R53930	39815	0.8219	1.6316	1.99	0.89	1.92	1.5	3.64	3.64	1.18
Hs.17639	AA486538	840937	0.1	0.1788	1.79	4.16	0.03	1.74	1.22	4.16	1.18
Hs.111991	AA418984	768096	1.666	3.2698	1.96	1.23	1.13	3.24	2.25	3.24	1.18
Hs.71331	AA130596	587992	6.4669	19.1555	2.96	2.63	2.15	4.08	2.98	4.08	1.18
Hs.147663	AA434420	770901	0.562	1.389	2.47	2.24	2.05	2.27	3.32	3.32	1.18
Hs.25227	AA443920	756731	1.3023	2.8514	2.19	3.92	0.75	2.11	1.97	3.92	1.18
Hs.214200	AA888148	1492104	19.7342	35.1346	1.78	1.05	0.8	3.27	1.99	3.27	1.17
Hs.99522	AA461576	795721	0.5583	0.9351	1.67	0.71	1.26	0.79	3.93	3.93	1.17
Hs.97635	AA398384	726934	1.1516	3.0769	2.67	2.85	1.35	3.83	2.65	3.83	1.17

Table 3

Hs.167106	AA465593	814246	8.4354	24.0023	2.85	4.49	2.1	2.32	2.48	4.49	1.17
Hs.211975	AA421420	739183	20.5845	30.923	1.5	3.16	0.5	1.23	1.12	3.16	1.16
Hs.173422	AA461304	796297	0.2174	0.5196	2.39	3.4	1.44	1.99	2.73	3.4	1.16
Hs.163295	H45003	183200	2.9251	5.0117	1.71	1.02	1.69	1.11	3.04	3.04	1.16
Hs.37477	AA005063	428529	0.2963	0.5763	1.95	0.93	1.02	1.79	4.04	4.04	1.16
Hs.6489	AA488230	877636	6.3224	11.3652	1.8	1.61	1.16	3.07	1.35	3.07	1.16
Hs.75819	AA448033	784910	0.1	0.2604	2.6	2.02	2.6	3.45	2.34	3.45	1.16
Hs.209508	R91986	195232	1.3456	3.0977	2.3	2.41	0.88	3.36	2.56	3.36	1.16
Hs.42746	N74313	298662	0.1211	0.2867	2.37	2.46	1.35	4.1	1.56	4.1	1.16
Hs.95327	AA055945	377560	6.468	11.4251	1.77	3.14	1.45	1.97	0.5	3.14	1.16
Hs.173464	AA054582	489444	0.7867	1.8062	2.3	3.85	1.07	2.73	1.54	3.85	1.16
Hs.205889	AA453790	813721	1.1498	2.6757	2.33	2.86	0.63	3.48	2.35	3.48	1.16
Hs.214478	N46888	277707	0.7521	2.1263	2.83	3.75	2.36	2.22	2.98	3.75	1.16
Hs.107088	AA775828	878496	6.2471	13.6702	2.19	1.95	0.98	3.46	2.35	3.46	1.15
Hs.10488	AA035095	471742	33.4935	92.6349	2.77	2.98	2.12	2.94	3.02	3.02	1.15
Hs.80227	AA733100	399597	1.7739	5.062	2.85	4.61	1.73	2.5	2.58	4.61	1.15
Hs.62187	W05406	299154	1.7512	3.8579	2.2	1.53	1.82	2.42	3.04	3.04	1.15
Hs.214173	AA457082	838628	4.8002	10.7362	2.24	2.3	0.86	4.63	1.16	4.63	1.15
Hs.31793	H45390	176565	1.6087	2.9103	1.81	1.24	0.73	2.11	3.16	3.16	1.15
Hs.112378	AA609556	1031698	1.4313	3.4819	2.43	4.52	1.67	2.18	1.36	4.52	1.15
Hs.120770	H99768	263840	1.4274	2.8466	1.99	1.07	1.05	2.13	3.73	3.73	1.15
Hs.6101	AA426586	768168	0.2379	0.4382	1.84	1.04	1.42	3.17	1.74	3.17	1.15
Hs.78466	AA464557	810550	0.2748	0.6231	2.27	2.15	0.85	3.97	2.1	3.97	1.15
		127230	0.4054	0.6316	1.56	3.1	0.93	1.38	0.82	3.1	1.15
Hs.15144	AA486805	841229	6.235	11.5467	1.85	2.14	0.65	3.11	1.51	3.11	1.14
Hs.13259	AA464095	810299	0.7133	1.6915	2.37	1.97	2.01	3.32	2.18	3.32	1.14
Hs.70769	AA464710	810240	0.4692	1.2615	2.69	2.36	2.47	3.67	2.25	3.67	1.14
Hs.8068	AA082499	366042	0.6976	1.3613	1.95	0.74	2.41	1.2	3.46	3.46	1.14
Hs.4311	H11320	47518	4.4622	10.3004	2.31	1.25	2.45	2.33	3.21	3.21	1.14
Hs.154156	AA705225	461425	12.8161	30.1511	2.35	2.16	1.64	2.28	3.32	3.32	1.14
Hs.178452	W01113	296788	10.66	26.9358	2.53	2.83	0.71	4.05	2.52	4.05	1.14
Hs.220414	AA192547	628418	0.1099	0.2733	2.49	4.34	1.64	2.31	1.67	4.34	1.13
Hs.111894	AA399320	726684	175.374	380.8081	2.17	3.15	1.08	1.6	2.86	3.15	1.13
Hs.55610	AA195463	627226	1.3781	2.4142	1.75	1.34	1.19	3.01	1.47	3.01	1.13
Hs.108104	AA486827	841261	1.1357	2.77	2.44	4.61	1.01	2.25	1.88	4.61	1.13

Table 3

Hs.216374	AA169547	594048	3.336	5.3262	1.6	1.72	0.69	3.51	0.46	3.51	1.13
Hs.203932	H50107	179143	2.252	4.9327	2.19	2.37	0.78	3.62	1.99	3.62	1.13
Hs.5302	AA130541	586685	3.9798	5.7696	1.45	0.47	0.64	0.33	4.36	4.36	1.13
Hs.60742	AA017066	361175	0.291	0.455	1.56	0.73	3.04	1.16	1.31	3.04	1.13
Hs.9932	AA451888	786663	1.6618	3.2296	1.94	3.19	0.96	1.58	2.05	3.19	1.13
Hs.54576	AA449459	785595	1.63	2.2027	1.35	0.56	0.48	3.35	1.01	3.35	1.13
Hs.19772	R06709	126453	3.5804	8.9299	2.49	1.96	1.43	3.68	2.92	3.68	1.12
Hs.99103	AA452346	786546	1.6588	3.5306	2.13	1.56	1.66	1.79	3.5	3.5	1.12
Hs.194860	AA448400	781362	0.1834	0.4652	2.54	3.84	1.53	2.55	2.23	3.84	1.12
Hs.150956	H19522	172765	0.1218	0.2838	2.33	4.36	1.08	2.21	1.67	4.36	1.12
Hs.215678	H85475	249753	2.2974	4.9239	2.14	3.11	0.9	2.89	1.67	3.11	1.12
Hs.63288	AA056509	509479	6.3027	14.5865	2.31	3.62	1.08	2.32	2.24	3.62	1.12
Hs.97726	AA400090	742702	0.1906	0.2674	1.4	3.29	0.24	0.99	1.09	3.29	1.12
Hs.7538	N73550	295982	0.3797	0.8259	2.17	2.3	1.25	4.07	1.08	4.07	1.12
		203700	0.5863	1.1202	1.91	1.09	1.27	4.58	0.71	4.58	1.12
Hs.75105	N67038	295986	16.275	26.2851	1.62	0.64	0.86	1.86	3.1	3.1	1.11
Hs.155983	AA505063	825668	1.9298	5.2088	2.7	2.75	1.02	4.46	2.57	4.46	1.11
Hs.19236	W21390	307933	8.9532	20.2772	2.26	3.43	1.53	2.48	1.62	3.43	1.11
Hs.216190	H55854	203434	0.7674	1.8434	2.4	2.26	1.96	3.38	2	3.38	1.11
Hs.22517	R42061	30428	5.2119	8.6785	1.67	0.64	4.69	0.59	0.74	4.69	1.11
Hs.98073	AA490463	823853	3.6231	6.5789	1.82	0.94	1.59	1.21	3.53	3.53	1.11
Hs.85992	AA195273	665276	0.5787	1.3216	2.28	1.5	1.18	3.58	2.86	3.58	1.11
Hs.153121	N45732	279711	0.3238	0.8376	2.59	2.32	1.1	4.38	2.55	4.38	1.11
Hs.32538	AA432074	784128	1.4434	2.3389	1.62	1.3	1.18	0.76	3.24	3.24	1.11
Hs.169395	H29250	52927	0.7326	1.1309	1.54	0.99	0.79	0.31	4.09	4.09	1.11
Hs.180991	R45963	35574	2.9085	7.0684	2.43	1.75	2.03	4.49	1.44	4.49	1.11
Hs.138503	R93783	197793	0.281	0.5586	1.99	3.31	1.51	1.36	1.77	3.31	1.1
Hs.90318	T52893	68103	83.7895	157.4333	1.88	3.13	1.01	1.65	1.73	3.13	1.1
Hs.188810	AI821465	236413	2.6825	3.8631	1.44	0.49	1.28	0.74	3.25	3.25	1.1
Hs.216154	N34429	277390	1.4838	4.2935	2.89	4.36	1.41	2.82	3	4.36	1.1
Hs.30464	AA425641	773345	3.0109	6.1761	2.05	0.79	2.27	2.09	3.05	3.05	1.1
Hs.193945	AA481578	815248	1.7146	4.3136	2.52	2.95	0.85	4.58	1.68	4.58	1.1
Hs.26996	AA699496	432484	1.5871	3.6687	2.31	3.54	0.84	2.43	2.44	3.54	1.1
Hs.220330	R00425	123229	2.8558	6.0049	2.1	1.77	1.33	3.39	1.91	3.39	1.09
Hs.115242	AA488466	842980	1.7396	4.2176	2.42	2.3	1.09	3.63	2.68	3.63	1.09

Table 3

Hs.104143	AA114226	564050	1.2395	2.7706	2.24	2.69	0.74	3.48	2.03	3.48	1.09
Hs.87773	AA460074	796442	1.8342	3.8414	2.09	1.81	1.5	1.84	3.22	3.22	1.09
Hs.190251	AA598515	897773	3.6161	8.6174	2.38	2.42	0.91	3.24	2.96	3.24	1.09
Hs.216302	AA172370	594988	1.7008	2.7225	1.6	3.2	0.86	1.7	0.64	3.2	1.09
Hs.77965	AA426019	773437	4.9112	10.4236	2.12	1.34	1.76	1.7	3.69	3.69	1.09
Hs.199041	W46488	323988	1.0712	2.3545	2.2	1.01	1.01	2.66	4.12	4.12	1.09
Hs.219871	AA599120	950473	11.0343	29.7	2.69	3.19	1.97	2.8	2.8	3.19	1.09
Hs.5944	T57235	71863	0.8863	1.1429	1.29	0.93	0.65	3.1	0.47	3.1	1.08
Hs.108969	AA427690	770454	8.3995	17.8517	2.13	1.37	1.13	3.16	2.84	3.16	1.08
Hs.218863	H19013	51015	1.12	1.9296	1.72	1.27	0.59	1.77	3.25	3.25	1.08
Hs.205353	H10010	46715	0.8173	2.385	2.92	2.92	2.35	4.12	2.28	4.12	1.08
Hs.43546	AA417933	767432	0.4409	0.7099	1.61	1.03	1.21	3	1.2	3	1.08
Hs.43462	N23877	255261	4.1595	10.0903	2.43	2.83	0.95	3.56	2.36	3.56	1.08
Hs.67614	AA074258	383185	6.7898	12.7178	1.87	1.53	0.9	3.38	1.69	3.38	1.08
Hs.98294	AA418383	767298	26.7199	59.3361	2.22	1.08	1.56	1.83	4.41	4.41	1.08
Hs.97437	H66030	210610	1.4181	3.4312	2.42	3.88	0.96	2.79	2.05	3.88	1.08
Hs.214736	AA521300	827171	2.0571	4.4524	2.16	1.53	1.18	4.64	1.31	4.64	1.08
Hs.7756	R77104	143997	2.5594	7.186	2.81	2.95	1.72	2.99	3.58	3.58	1.08
Hs.93796	H83178	199158	2.4426	5.8426	2.39	2.76	1.03	3.61	2.17	3.61	1.08
Hs.13879	H96527	251201	2.8199	6.7236	2.38	2.04	1.54	3.93	2.02	3.93	1.08
Hs.50745	W15150	300618	1.2034	3.13	2.6	4.61	1.1	2.36	2.33	4.61	1.08
Hs.81648	N50738	283723	5.6135	14.5471	2.59	2.37	2.3	3.61	2.09	3.61	1.08
Hs.172689	W44701	320903	73.3437	184.937	2.52	3.85	1.74	2.17	2.32	3.85	1.08
Hs.112915	AA620862	1049336	7.2778	16.0894	2.21	3.63	1.14	2.7	1.37	3.63	1.07
Hs.34136	N30699	257382	7.3622	17.0288	2.31	1.88	1.45	2.88	3.04	3.04	1.07
Hs.215825	N72879	291539	3.685	9.4745	2.57	3.53	1.58	2.97	2.21	3.53	1.07
Hs.62146	N26163	269411	2.257	4.7265	2.09	2.24	0.92	1.92	3.3	3.3	1.07
Hs.197277	AA417683	752668	0.6498	1.4996	2.31	1.83	1.93	3.24	2.24	3.24	1.07
Hs.84520	N92380	308163	1.9288	2.4446	1.27	0.45	3.44	0.5	0.68	3.44	1.07
Hs.126497	N23390	268338	4.1468	8.7645	2.11	1.63	1.39	3.53	1.9	3.53	1.07
Hs.79440	AA187966	624744	0.4209	0.9953	2.36	2.83	3.3	2.2	1.13	3.3	1.07
Hs.133998	AA453181	795260	0.9712	2.2496	2.32	2.07	0.57	2.39	4.24	4.24	1.07
Hs.12680	AA460239	796505	0.9846	2.0003	2.03	4.01	1.22	1.45	1.45	4.01	1.07
Hs.135623	R64251	139872	0.6329	1.4076	2.22	2.15	1.07	3.42	2.25	3.42	1.06
Hs.214948	AI668664	306829	1.4526	2.2792	1.57	1.16	0.53	4	0.59	4	1.06

Table 3

Hs.75652	AA056231	377731	1.8828	4.027	2.14	3.31	1.37	2.09	1.79	3.31	1.06
Hs.75102	AA157743	588829	3.088	6.184	2	0.71	1.6	1.72	3.98	3.98	1.06
		488839	1.2024	2.7192	2.26	1.01	2.19	2.83	3.02	3.02	1.06
Hs.38613	AA704230	450532	2.5933	6.5159	2.51	1.75	1.73	4.36	2.21	4.36	1.06
Hs.77965	AA458502	809621	4.8824	13.3894	2.74	2.22	2.31	2.41	4.02	4.02	1.06
Hs.58659	W81371	347726	0.4492	1.0186	2.27	1.46	3.18	2.04	2.38	3.18	1.06
Hs.19150	AA425208	773214	0.969	1.7059	1.76	0.98	1.49	1.49	3.08	3.08	1.06
Hs.193989	N69283	293576	18.162	47.2842	2.6	2.86	2.04	3.13	2.38	3.13	1.06
Hs.7137	R13243	28098	11.0373	24.4942	2.22	3.43	1.04	2.62	1.78	3.43	1.06
Hs.33781	AA429326	768569	0.3453	0.8538	2.47	1.42	2.64	2.61	3.22	3.22	1.05
Hs.108104	AA669526	853988	11.9254	22.6099	1.9	3.69	0.99	1.71	1.19	3.69	1.05
Hs.28005	AA191512	626640	2.9885	8.8629	2.97	2.9	2.49	2.94	3.53	3.53	1.05
Hs.95941	R91577	196570	9.2481	22.7539	2.46	3.45	1.18	2.94	2.28	3.45	1.05
Hs.93698	H53073	202395	0.1689	0.314	1.86	2.22	0.76	3.25	1.21	3.25	1.05
Hs.833	AA406019	742132	0.2345	0.4997	2.13	1.69	1.89	3.37	1.56	3.37	1.05
Hs.54576	W24628	308216	2.3499	4.3491	1.85	0.51	0.65	4.62	1.63	4.62	1.05
Hs.100806	R09725	127751	4.1712	10.4273	2.5	2.99	1.38	2.12	3.52	3.52	1.05
Hs.99354	AA453999	795243	0.1	0.1831	1.83	1.22	3.68	1.27	1.14	3.68	1.05
Hs.5565	AA281743	712377	1.2491	2.5091	2.01	3.09	1.13	1.82	2	3.09	1.05
Hs.16986	AA446792	784174	7.7446	15.7052	2.03	1.35	1.15	3.28	2.33	3.28	1.05
Hs.94070	N32201	258606	0.5024	0.8886	1.77	3.09	0.45	2.29	1.25	3.09	1.05
Hs.74077	AA047338	509495	10.4728	24.7081	2.36	3.4	1.99	2.01	2.04	3.4	1.05
Hs.190703	AA873355	1471841	18.6288	42.8364	2.3	1.65	2.28	1.85	3.42	3.42	1.05
Hs.816	AA451892	786674	0.1378	0.2949	2.14	2.24	0.91	3.44	1.97	3.44	1.05
Hs.182225	AA054406	380797	7.3997	11.9722	1.62	3.3	0.9	0.83	1.43	3.3	1.05
Hs.24064	R26417	132857	0.6341	1.537	2.42	2.63	1.06	2.91	3.1	3.1	1.05
Hs.118321	N42469	271483	0.1	0.1184	1.18	3.36	0.51	0.65	0.22	3.36	1.04
Hs.20879	AA053665	510369	3.4551	7.1393	2.07	1.85	0.89	3.27	2.25	3.27	1.04
Hs.218659	N24868	267131	3.52	8.7337	2.48	2.55	1.68	3.95	1.75	3.95	1.04
Hs.213548	AA450333	785540	0.9345	1.8813	2.01	1.27	1.9	1.59	3.29	3.29	1.04
Hs.28456	R63900	139660	2.1332	5.1635	2.42	3.68	1.82	1.79	2.4	3.68	1.04
Hs.22026	R16547	129610	0.7149	1.2292	1.72	3.04	0.93	2.06	0.85	3.04	1.04
Hs.214450	AA447502	784283	3.5425	6.8434	1.93	3.17	1.34	1.54	1.68	3.17	1.04
Hs.212433	AA033832	375800	1.2624	2.9576	2.34	1.4	1.43	2.26	4.29	4.29	1.04
Hs.107823	AA599717	1070015	1.463	2.6359	1.8	1.03	3.09	1.86	1.24	3.09	1.03

Table 3

Hs.128687	N94758	278023	1.1142	2.619	2.35	1.91	1.18	3.86	2.46	3.86	1.03
Hs.5119	N28391	263040	2.0982	4.3637	2.08	1.76	0.81	3.25	2.51	3.25	1.03
Hs.8148	R78516	144915	3.6733	7.1758	1.95	3.08	1.29	1.87	1.57	3.08	1.03
Hs.59300	AA033986	429928	0.9178	1.6583	1.81	1.78	0.88	3.68	0.88	3.68	1.03
Hs.29835	AA443702	784028	1.7451	4.0348	2.31	3.16	1.57	2.84	1.67	3.16	1.03
Hs.179943	AA680244	869450	125.9083	191.4684	1.52	0.66	3.11	2	0.3	3.11	1.03
Hs.34345	AA775763	878212	0.1736	0.4183	2.41	1.41	2	3.65	2.58	3.65	1.03
Hs.78596	AA864479	1460110	40.3039	100.4663	2.49	3.8	1.51	2.76	1.9	3.8	1.03
Hs.181316	N77415	284670	0.4162	0.7206	1.73	1.69	0.97	3.42	0.85	3.42	1.03
Hs.24500	N92924	307687	1.3566	3.6158	2.67	1.73	1.2	4.98	2.75	4.98	1.02
Hs.23518	N77034	289677	1.4786	2.7471	1.86	1	1.28	1.95	3.21	3.21	1.02
Hs.29640	AA497093	897518	0.845	1.829	2.16	4.57	1.05	2.11	0.93	4.57	1.02
Hs.180591	N77138	289916	1.8968	3.5945	1.9	1.34	1.53	1.09	3.61	3.61	1.02
Hs.104624	AA621132	1046484	0.5424	0.9841	1.81	3.45	1.81	0.75	1.25	3.45	1.02
Hs.170121	H74264	229365	1.7123	3.6297	2.12	4.55	1.37	2.01	0.54	4.55	1.02
Hs.65407	AA448161	782768	0.3175	0.754	2.37	2.17	1.16	3.75	2.42	3.75	1.02
Hs.171873	W87752	417251	1.7822	3.319	1.86	1.74	0.94	3.04	1.73	3.04	1.02
Hs.819	AA857101	1434905	0.1	0.1629	1.63	3.96	1.43	0.53	0.6	3.96	1.02
Hs.215111	H09614	46132	1.4483	2.44	1.68	3.14	1.13	1.07	1.4	3.14	1.02
Hs.47508	N52549	244772	0.3397	0.8165	2.4	1.27	1.67	2.05	4.63	4.63	1.02
		449033	0.7292	1.3861	1.9	1.87	3.16	1.87	0.69	3.16	1.01
Hs.202473	AA417384	731198	0.1579	0.2972	1.88	0.55	4.55	0.91	1.52	4.55	1.01
Hs.18948	AA676225	431505	0.4003	0.9299	2.32	1.69	1.31	3	3.29	3.29	1.01
Hs.216123	R85342	180307	0.5396	0.995	1.84	3.67	0.96	1.31	1.43	3.67	1.01
Hs.4815	AA256802	682066	0.1933	0.3794	1.96	0.62	1.51	2.05	3.67	3.67	1.01
Hs.214786	W60718	341821	0.9693	2.5128	2.59	4.29	2.01	2.27	1.8	4.29	1.01
Hs.76277	AA443936	757143	0.2778	0.4212	1.52	0.85	3.13	0.75	1.34	3.13	1.01
Hs.88118	T65407	21738	4.8251	13.5229	2.8	2.64	1.56	4.73	2.29	4.73	1.01
Hs.46762	N47785	281080	0.704	1.2606	1.79	3.85	1.27	0.74	1.3	3.85	1.01
Hs.2719	AA451904	786675	5.9655	12.3031	2.06	0.29	2.33	2.18	3.45	3.45	1.01
Hs.20369	R09602	127708	1.1687	2.6193	2.24	1.28	1.89	2.53	3.27	3.27	1
Hs.112019	AA489847	839870	1.0855	2.5471	2.35	1.67	1.4	3.97	2.35	3.97	1
Hs.127799	AA002125	428231	0.6693	1.7082	2.55	3.32	2.59	2.55	1.75	3.32	1
Hs.218680	H69683	212772	0.5484	1.0826	1.97	4.07	1.44	1.45	0.94	4.07	1
Hs.169181	R26456	133192	0.1	0.1578	1.58	0.87	0.54	3.11	1.79	3.11	1

Table 3

Hs.182628	AA477008	739625	11.0051	21.4513	1.95	3.69	0.58	1.85	1.68	3.69	1
Hs.217461	W90740	418262	0.327	0.5997	1.83	3.01	1.19	1.35	1.78	3.01	1
Hs.157319	AA040170	485989	0.8232	1.661	2.02	3.43	1.61	1.98	1.05	3.43	1
Hs.3631	AA463498	796996	6.6097	14.6957	2.22	3.31	1.35	1.88	2.36	3.31	1
Hs.83384	AA424102	759948	4.5284	7.572	1.67	3.87	1.26	1.26	0.3	3.87	1
Hs.21395	AA018437	362378	0.134	0.2434	1.82	0.97	0.76	4.88	0.66	4.88	1
Hs.12249	H12946	43532	0.7447	1.2849	1.73	0.86	4.7	0.47	0.86	4.7	1
Hs.102756	R31701	134783	0.3262	0.5262	1.61	3.2	0.63	1.86	0.76	3.2	0.99
Hs.15917	AA004975	428936	1.0667	2.7115	2.54	3.12	1.59	2.91	2.54	3.12	0.99
Hs.215284	AA158345	591095	0.4522	0.8487	1.88	0.8	3.44	1.54	1.74	3.44	0.99
Hs.79126	AA461574	795738	2.2601	3.7472	1.66	3.35	1.55	0.62	1.1	3.35	0.99
Hs.188882	AA487218	841314	0.154	0.3481	2.26	0.96	0.62	2.85	4.6	4.6	0.99
Hs.82043	AA448289	784830	3.577	7.422	2.07	1.92	1.22	1.98	3.19	3.19	0.99
Hs.159440	R98623	201383	0.9954	2.2256	2.24	3.26	0.89	2.13	2.67	3.26	0.99
Hs.183105	AA418821	767994	2.9416	5.4695	1.86	3.51	1.52	1.26	1.15	3.51	0.99
Hs.62917	AA046116	376664	2.5496	5.2824	2.07	2.71	1.02	3.07	1.49	3.07	0.99
Hs.155156	AA451903	786673	3.315	6.5113	1.96	3.14	1.57	1.31	1.84	3.14	0.99
Hs.62620	AA491208	824052	0.1	0.1869	1.87	2.23	3.96	0.87	0.42	3.96	0.99
Hs.176775	AA430687	771016	0.484	0.9179	1.9	1.87	1.39	1.12	3.21	3.21	0.99
Hs.104925	R85090	180512	0.6071	1.2058	1.99	2.38	1.22	1.15	3.19	3.19	0.99
Hs.7365	AA418922	767983	4.2031	11.0278	2.62	1.89	2.21	2.37	4.03	4.03	0.99
Hs.217494	AA876039	1161775	1.2525	2.1543	1.72	1.12	0.99	3.31	1.47	3.31	0.99
Hs.75251	R20392	32565	10.4552	24.9361	2.39	1.51	1.88	3.72	2.43	3.72	0.98
Hs.109276	W47077	325070	1.8775	4.2916	2.29	3.97	1.46	2.06	1.65	3.97	0.98
Hs.219020	AA633747	857640	0.1005	0.2723	2.71	4.48	1.23	2.33	2.8	4.48	0.98
Hs.108104	AA486612	841188	3.0106	5.6228	1.87	3.12	1.18	1.73	1.44	3.12	0.98
Hs.172561	H96095	250822	1.2843	2.3182	1.8	1.02	0.86	3	2.34	3	0.98
Hs.42946	AA039857	375853	1.0343	2.2634	2.19	3.64	1.03	1.99	2.1	3.64	0.98
Hs.214921	AA194973	665398	1.4519	3.3591	2.31	2.11	2.11	3.29	1.74	3.29	0.98
Hs.47447	N52151	284383	1.3735	2.9167	2.12	2.38	0.9	3.26	1.95	3.26	0.98
Hs.148645	W87384	417067	0.3339	0.5602	1.68	3.36	0.72	1.8	0.82	3.36	0.98
Hs.216852	AA480979	814616	1.0645	2.0288	1.91	1.85	0.56	3.1	2.11	3.1	0.98
Hs.194754	AA195398	627211	6.9967	13.9901	2	2.33	0.91	3.19	1.57	3.19	0.98
Hs.7945	H80804	219592	0.1	0.1823	1.82	0.7	3.02	2.25	1.32	3.02	0.98
Hs.213159	R16367	29920	0.8542	1.4029	1.64	1.92	0.29	3.79	0.57	3.79	0.97

Table 3

Hs.111429	R54779	154610	7.694	17.5115	2.28	2.65	1.37	3.23	1.85	3.23	0.97
Hs.28340	R62604	138999	0.8189	1.793	2.19	1.57	1.83	3.48	1.88	3.48	0.97
Hs.43005	N80848	300661	0.5045	1.065	2.11	3.58	1.08	2.62	1.17	3.58	0.97
Hs.97854	AA404356	758370	0.5165	0.8818	1.71	0.7	4.03	1.06	1.05	4.03	0.97
Hs.90598	N71782	290724	0.567	1.1928	2.1	3.55	1	2.48	1.39	3.55	0.97
Hs.22744	AA283932	700677	1.072	2.5062	2.34	2.27	0.87	4.77	1.44	4.77	0.97
Hs.218065	AA487767	840460	7.6903	12.6394	1.64	3.84	1.08	1.26	0.39	3.84	0.97
Hs.36190	N59482	246792	0.739	1.3116	1.77	3.21	1.09	1.58	1.23	3.21	0.97
Hs.44930	N39063	276468	0.5807	1.0881	1.87	3.94	0.89	1.57	1.09	3.94	0.97
Hs.218854	W90659	417976	2.6144	6.0652	2.32	2.64	0.63	3.64	2.37	3.64	0.97
Hs.110803	AA463568	797024	21.4657	61.6939	2.87	4.95	2.04	2.32	2.18	4.95	0.97
Hs.1311	AA002132	428103	1.4639	2.7616	1.89	3.93	0.57	1.82	1.23	3.93	0.97
Hs.137482	AA022684	364613	0.3786	0.7339	1.94	1.76	1.36	3.24	1.4	3.24	0.96
Hs.26868	N51401	283272	0.6565	1.3162	2	1.53	1.15	3.84	1.5	3.84	0.96
Hs.13149	AA425323	773261	5.0735	9.8067	1.93	1.62	0.87	2	3.24	3.24	0.96
Hs.7889	AA482294	824701	0.7894	2.2499	2.85	2.01	2.71	4.06	2.62	4.06	0.96
Hs.184598	AA464018	810263	0.6284	1.3124	2.09	1.3	1.76	1.77	3.53	3.53	0.96
Hs.159613	AA864524	1470530	2.3073	5.7727	2.5	1.9	1.46	3.92	2.73	3.92	0.96
Hs.1066	AA678021	431803	15.1391	33.8521	2.24	0.62	2.8	3.54	1.98	3.54	0.96
Hs.57841	W63776	342164	0.1	0.1511	1.51	4.4	0.73	0.5	0.41	4.4	0.96
Hs.195496	AA100657	511850	59.6934	168.2194	2.82	4.87	1.85	2.11	2.44	4.87	0.96
Hs.155470	AA088564	511814	3.5188	7.5212	2.14	1.83	0.51	3.27	2.94	3.27	0.96
Hs.101392	N51702	279077	1.1182	2.5471	2.28	1.93	1.19	3.31	2.68	3.31	0.95
Hs.78824	AA432062	784124	0.2545	0.6031	2.37	3.89	1.03	2.86	1.7	3.89	0.95
Hs.173497	AA634360	743804	4.8801	11.1568	2.29	1.96	0.68	3.74	2.77	3.74	0.95
Hs.29835	W24886	308484	1.4774	3.2046	2.17	3.07	1.47	2.66	1.47	3.07	0.95
Hs.13916	N36040	270017	0.1	0.1872	1.87	1.79	1.52	3	1.18	3	0.95
Hs.174142	R92609	196282	0.2321	0.4356	1.88	1.33	1.44	3.13	1.61	3.13	0.95
Hs.220313	AA454880	810019	0.5812	1.1231	1.93	3.43	0.79	1.75	1.76	3.43	0.95
Hs.95871	AA147454	505495	0.8311	1.3025	1.57	0.88	3.64	0.91	0.83	3.64	0.95
Hs.7049	W23819	309803	3.1007	6.943	2.24	2.35	0.84	2.58	3.19	3.19	0.94
Hs.218325	R83880	193987	0.8972	2.2477	2.51	2.61	1.29	3.17	2.95	3.17	0.94
Hs.66450	AA488797	824764	0.337	0.7963	2.36	2.06	1.56	3.11	2.72	3.11	0.94
Hs.184456	AA455040	812240	2.0984	5.1804	2.47	2.65	1.46	2.18	3.59	3.59	0.94
Hs.78409	W07798	301061	0.3718	0.9574	2.58	4.71	0.71	2.87	2.02	4.71	0.94

Table 3

Hs.67364	AA487608	839081	5.933	15.7977	2.66	2.83	1.77	3.95	2.1	3.95	0.94
Hs.93405	AA481177	815126	2.1941	5.1206	2.33	1.63	2.24	3.39	2.07	3.39	0.94
Hs.79110	AA433818	770704	20.6718	52.6741	2.55	2.62	1.07	3.66	2.84	3.66	0.94
Hs.10653	H02039	151067	0.9296	2.2109	2.38	3.01	0.99	2.71	2.8	3.01	0.94
Hs.29258	W37424	322028	3.582	8.6323	2.41	2.59	1.13	2.24	3.69	3.69	0.94
Hs.25560	R51946	154214	0.7071	1.6317	2.31	1.94	1.78	3.03	2.48	3.03	0.94
Hs.218635	H75569	232887	0.4397	0.8405	1.91	3	1.18	1.92	1.55	3	0.94
Hs.219910	H52390	202199	1.31	3.5361	2.7	2.09	1.55	4.29	2.86	4.29	0.94
Hs.184244	N71080	299465	0.3858	0.8866	2.3	3.96	1.19	2.18	1.87	3.96	0.94
Hs.29797	T67271	66686	108.6104	244.5442	2.25	3.64	1.47	1.88	2.02	3.64	0.94
Hs.6900	AA449621	785886	9.1454	24.0047	2.62	2.87	1.52	3.62	2.49	3.62	0.94
Hs.77864	AA405636	772437	1.0171	1.9313	1.9	2.22	0.94	1.19	3.24	3.24	0.94
Hs.29797	T67271	66686	79.7663	195.8519	2.46	3.51	1.54	2.33	2.44	3.51	0.94
Hs.5509	AA159688	593183	5.9915	11.4695	1.91	4.07	0.93	2	0.66	4.07	0.93
Hs.5409	AA733038	399532	8.6626	22.4968	2.6	3.39	1.86	2.4	2.73	3.39	0.93
Hs.77703	AA147361	589232	11.8786	27.2674	2.3	2.09	1.6	3.27	2.23	3.27	0.93
		128167	0.8419	1.5929	1.89	3.53	1.5	1.41	1.13	3.53	0.93
Hs.14235	N72800	246116	3.1959	7.6947	2.41	0.9	2.04	4.6	2.08	4.6	0.93
Hs.154730	AA682399	461761	2.2578	4.7688	2.11	3.01	0.63	2.93	1.88	3.01	0.93
Hs.178452	AA676957	897164	14.5712	33.4249	2.29	2.12	1.33	3.48	2.24	3.48	0.93
Hs.194695	W76278	345680	0.6985	1.4241	2.04	3.97	0.73	2.5	0.96	3.97	0.93
Hs.9216	T50828	72778	5.1294	10.2995	2.01	3.82	1.68	1.86	0.67	3.82	0.93
Hs.169969	R51015	38537	0.8554	1.5246	1.78	1.27	1.37	3.6	0.89	3.6	0.93
Hs.75730	AA598621	898242	8.4979	15.0364	1.77	3.1	0.47	1.95	1.57	3.1	0.93
Hs.154353	W47115	324664	0.2245	0.3918	1.75	4.16	0.73	1.05	1.04	4.16	0.93
Hs.41135	N44141	272630	1.2856	2.5877	2.01	3.28	0.74	2.84	1.19	3.28	0.93
Hs.7994	H61979	208531	1.0398	2.0779	2	1.65	1.36	3.76	1.22	3.76	0.93
Hs.23607	AA293784	726849	1.2901	2.6649	2.07	1.57	1.3	3.22	2.18	3.22	0.92
Hs.98314	AA418988	768111	0.2534	0.5955	2.35	2.1	3.23	1.43	2.64	3.23	0.92
Hs.146861	AA456014	812144	3.6601	8.3118	2.27	3.6	1.08	2.22	2.19	3.6	0.92
Hs.216997	AA460838	796278	3.1886	9.1906	2.88	2.73	1.5	4.56	2.74	4.56	0.92
Hs.75160	AA101919	489626	5.0629	12.0168	2.37	2.93	0.92	3.18	2.47	3.18	0.92
Hs.47522	N52615	283932	0.3367	0.6413	1.9	0.99	0.76	4.03	1.85	4.03	0.92
Hs.65486	AA452250	786580	0.4974	0.9647	1.94	3.19	1.35	1.53	1.68	3.19	0.92
Hs.182470	AA292871	727278	24.9982	52.5478	2.1	1.36	1.39	3.64	2.02	3.64	0.92

Table 3

Hs.22353	AA279150	704026	2.4393	5.5282	2.27	1.71	1.92	2.41	3.02	3.02	0.92
Hs.217880	R22155	130773	2.6337	3.926	1.49	3.1	0.51	1.16	1.19	3.1	0.92
Hs.104252	AA676840	460114	0.2931	0.4757	1.62	1.69	0.34	3.39	1.07	3.39	0.92
Hs.9043	T49712	67960	7.7878	21.0415	2.7	3.5	2.52	2.69	2.1	3.5	0.92
Hs.112519	AI732637	1070062	0.1992	0.3145	1.58	0.73	0.79	4.01	0.78	4.01	0.92
Hs.156814	H29678	52646	0.5592	1.1309	2.02	0.86	1.28	3.35	2.59	3.35	0.92
Hs.198789	AA410680	723986	2.4945	5.2217	2.09	2.36	1.15	3.09	1.77	3.09	0.92
Hs.76845	N75028	299679	1.6461	3.0252	1.84	0.57	1.29	4.41	1.08	4.41	0.91
Hs.7918	AA598970	898276	0.6935	1.3491	1.95	1.44	3.13	1.57	1.64	3.13	0.91
Hs.181545	N54540	244931	0.6252	1.598	2.56	1.1	2.01	2.73	4.39	4.39	0.91
Hs.106688	R59087	41940	4.5703	9.8646	2.16	1.82	0.62	3.2	2.99	3.2	0.91
Hs.215245	AA083228	549073	23.7398	53.6209	2.26	3.59	0.77	2.51	2.17	3.59	0.91
Hs.95941	H99586	263227	14.3106	33.792	2.36	3.23	1.29	2.25	2.67	3.23	0.91
Hs.117950	N44764	273546	11.5353	29.5409	2.56	2.74	1.59	4.3	1.61	4.3	0.91
Hs.80617	AA668301	853151	130.5795	322.3892	2.47	1.61	3.81	2.44	2.03	3.81	0.91
Hs.21490	AA142966	504657	3.8133	8.4626	2.22	2.81	0.89	4.23	0.95	4.23	0.91
Hs.66151	W45690	323506	0.1	0.1363	1.36	3.77	0.4	0.82	0.47	3.77	0.91
Hs.112657	AA609161	1031402	1.0169	1.8847	1.85	1.48	0.84	3.19	1.89	3.19	0.91
Hs.155160	W87713	416951	0.5667	1.2394	2.19	2.37	0.91	3.62	1.85	3.62	0.91
Hs.21893	AA460258	796527	1.0689	3.0086	2.81	2.36	1.75	2.25	4.89	4.89	0.91
Hs.13046	AA453335	789376	1.3208	3.9944	3.02	2.98	3.58	2.95	2.59	3.58	0.91
Hs.98080	AA411674	753279	0.3731	0.7584	2.03	3.1	1.52	1.96	1.56	3.1	0.91
Hs.56002	W52378	325544	15.4962	39.3492	2.54	1.96	2.61	3.04	2.55	3.04	0.9
Hs.193827	N45616	279513	0.2189	0.5262	2.4	3.9	1.01	2.78	1.92	3.9	0.9
Hs.82590	N53024	244277	2.6369	6.1622	2.34	4.19	0.92	1.75	2.49	4.19	0.9
Hs.86368	AA778675	1049033	0.619	1.0154	1.64	0.49	1.23	3.71	1.13	3.71	0.9
Hs.215622	N78357	287581	0.8497	1.4073	1.66	0.82	0.54	2.26	3	3	0.9
Hs.1023	T65833	80374	11.4231	25.0193	2.19	3.32	0.97	1.85	2.63	3.32	0.9
Hs.49559	N68686	293243	10.6533	25.9359	2.43	2.64	0.73	3.62	2.75	3.62	0.9
Hs.79386	AA442043	774078	0.3636	0.7615	2.09	3.46	1.38	1.93	1.61	3.46	0.9
Hs.194779	N36174	272690	0.5363	1.1038	2.06	1.41	0.62	3.42	2.78	3.42	0.9
Hs.171873	AA707661	451711	5.4672	12.4839	2.28	1.9	1.81	3.25	2.18	3.25	0.9
Hs.13477	W87826	417081	1.3049	3.0965	2.37	2.71	0.93	3.79	2.07	3.79	0.9
Hs.169854	W84690	356883	1.5113	3.4629	2.29	1.77	1.13	3.31	2.96	3.31	0.9
Hs.165238	AA147032	505576	0.955	1.4554	1.52	3.16	0.75	1.47	0.72	3.16	0.9

Table 3

Hs.104348	AA251338	684562	1.5131	4.0847	2.7	2.36	3.27	2.78	2.38	3.27	0.9
Hs.61178	AA024389	364681	1.1391	1.8432	1.62	4.15	0.85	0.63	0.84	4.15	0.9
Hs.18407	AA465720	814983	1.0034	2.3472	2.34	2.08	1.15	4.7	1.44	4.7	0.9
Hs.24655	R33477	136303	5.6589	10.5834	1.87	3.82	0.46	1.76	1.44	3.82	0.9
Hs.154797	AA451767	788721	0.1852	0.4771	2.58	2.7	1.52	3.61	2.48	3.61	0.9
Hs.13063	AA045345	487761	5.6898	11.3897	2	1.43	1.52	3.12	1.94	3.12	0.9
Hs.169228	AA701996	436121	0.1	0.1365	1.37	0.26	0.34	3.52	1.34	3.52	#REF!
Hs.61418	R01323	123802	5.0376	12.1272	2.41	2.29	1.68	3.54	2.12	3.54	0.9
Hs.215990	N32912	259902	5.1715	13.0293	2.52	3.31	2.44	2.21	2.12	3.31	0.89
Hs.49881	AA148548	491559	0.4788	1.1983	2.5	4.71	1.13	2.9	1.27	4.71	0.89
Hs.172247	N91962	306921	1.6897	4.6915	2.78	2.49	2.24	3.84	2.54	3.84	0.89
Hs.55938	W46341	323806	7.4698	18.6067	2.49	3.14	1.74	2.49	2.58	3.14	0.89
Hs.23912	AA256824	682088	0.4809	1.0327	2.15	1.62	1.35	3.39	2.23	3.39	0.89
Hs.77501	R55105	40562	1.665	3.5324	2.12	4.38	0.8	2.76	0.55	4.38	0.89
Hs.197540	AA598526	897806	5.6267	9.9439	1.77	3.53	1.46	1.52	0.55	3.53	0.89
Hs.128783	H48677	207107	0.464	1.1389	2.45	4.33	1.57	1.9	2.02	4.33	0.89
Hs.21943	AA206267	645368	6.9187	17.1882	2.48	3.07	1.57	2.69	2.61	3.07	0.89
Hs.91142	N21621	266085	0.9083	1.339	1.47	0.59	3.16	0.59	1.56	3.16	0.89
Hs.58643	AA490900	824523	0.9246	2.3049	2.49	4.37	2	1.76	1.85	4.37	0.89
Hs.60293	AA009755	429811	0.6606	1.1565	1.75	1.25	1	3.04	1.71	3.04	0.89
Hs.180612	AA452566	788518	8.9586	20.2326	2.26	3.44	1.07	2.68	1.84	3.44	0.89
		212101	0.6909	1.372	1.99	1.44	1.58	3.37	1.55	3.37	0.89
Hs.102708	AA481540	815279	3.9407	7.9834	2.03	1.98	0.93	3.26	1.93	3.26	0.89
Hs.98121	AA470003	731448	1.521	2.8834	1.9	3.45	0.89	1.87	1.38	3.45	0.89
Hs.8035	AA425467	773142	0.9007	1.6073	1.78	1.41	0.81	1.33	3.59	3.59	0.89
Hs.43728	AA418959	768007	2.1325	5.6804	2.66	2.74	1.58	2.89	3.45	3.45	0.89
Hs.147189	R01637	123980	1.0647	1.9032	1.79	1.51	0.67	3.48	1.49	3.48	0.89
Hs.32244	AA447610	782701	0.1079	0.1334	1.24	0.01	0.58	0.61	3.74	3.74	0.89
Hs.8136	R32440	131979	279.0919	378.8919	1.36	0.63	3.05	0.73	1.02	3.05	0.88
Hs.107884	AA131421	503671	8.3773	19.1759	2.29	3.43	1.12	2.39	2.22	3.43	0.88
Hs.180889	AA426341	757404	7.7243	21.0941	2.73	4.05	1.33	2.85	2.69	4.05	0.88
Hs.21107	AA479398	754303	0.6913	1.4762	2.14	1.5	1.3	2.5	3.25	3.25	0.88
Hs.99027	AA452822	788554	3.0154	6.3354	2.1	1.21	1.6	2.27	3.32	3.32	0.88
Hs.92208	AA292676	713782	0.1	0.1485	1.48	4.08	0.6	0.54	0.72	4.08	0.88
Hs.4299	AA455519	809824	0.602	1.4292	2.37	2.01	1.71	1.37	4.41	4.41	0.88

Table 3

Hs.28714	R66268	140732	0.1788	0.3952	2.21	2.47	1.52	3.28	1.57	3.28	0.88
Hs.28582	W67330	343400	0.4113	0.9158	2.23	2.64	3.34	1.31	1.61	3.34	0.88
Hs.41846	H93149	231675	1.0934	1.8782	1.72	3.02	1.32	1.88	0.66	3.02	0.88
Hs.36747	H55909	204122	0.7974	1.315	1.65	0.96	1.02	3.01	1.61	3.01	0.87
Hs.74276	AA485913	843121	7.8068	19.1941	2.46	3.51	1.55	1.85	2.93	3.51	0.87
Hs.155244	N47362	277537	0.8291	2.115	2.55	2.58	2.2	3.11	2.31	3.11	0.87
Hs.161102	N35493	272192	3.3157	7.5286	2.27	1.49	2.08	2.38	3.13	3.13	0.87
Hs.85112	AA456321	813179	1.4512	3.581	2.47	4.81	0.58	1.96	2.52	4.81	0.87
Hs.21586	AA150161	504555	0.9097	2.287	2.51	2.44	0.76	4.66	2.2	4.66	0.87
Hs.15740	N79910	289787	0.3817	0.7816	2.05	3.52	1.71	1.48	1.48	3.52	0.87
Hs.42582	H98812	262053	11.4995	18.8065	1.64	1.48	1.1	3.32	0.65	3.32	0.87
Hs.20478	AA664004	855385	1.4953	2.7671	1.85	3.31	1.05	1.79	1.25	3.31	0.87
Hs.101565	R78469	144870	3.8783	10.9045	2.81	2.08	2.45	4.42	2.3	4.42	0.87
Hs.46784	AA418442	767262	0.3533	0.7179	2.03	1.52	1.29	0.73	4.59	4.59	0.87
Hs.20242	AA497119	823582	1.1857	2.113	1.78	1.16	2.11	0.84	3.02	3.02	0.87
Hs.187730	H72119	213660	0.8109	1.9795	2.44	4.67	1.14	2.64	1.31	4.67	0.86
Hs.111244	AA453677	813645	0.8952	1.71	1.91	0.46	4.78	1.14	1.26	4.78	0.86
Hs.191662	AA481618	815281	3.0065	6.9695	2.32	2.29	1.17	3.22	2.59	3.22	0.86
Hs.118468	AA429989	774471	1.2105	2.8903	2.39	3.2	2.89	1.05	2.41	3.2	0.86
Hs.9534	AA465269	815040	18.8795	54.7667	2.9	4.62	2.23	2.53	2.22	4.62	0.86
Hs.28866	R68344	137836	1.3219	3.1574	2.39	4.15	1.69	2.19	1.51	4.15	0.86
Hs.203893	R33763	136260	2.2377	5.457	2.44	2.5	0.52	3.78	2.95	3.78	0.86
Hs.43827	AA455262	814817	0.7508	1.6312	2.17	2.22	0.73	3.66	2.07	3.66	0.85
Hs.6092	H15385	49222	0.7728	1.777	2.3	4.36	1.2	1.9	1.73	4.36	0.85
Hs.81360	N73130	248039	4.1735	8.3562	2	3.82	1.43	1.73	1.04	3.82	0.85
Hs.155202	AA128607	526657	5.6678	11.6939	2.06	3.27	1.64	1.31	2.03	3.27	0.85
Hs.123650	H59618	207275	0.1129	0.2308	2.04	1.51	0.6	3.65	2.41	3.65	0.85
Hs.128815	AA678072	430628	2.7011	6.7224	2.49	3.02	2.56	2.7	1.68	3.02	0.85
Hs.26433	R55619	154749	4.0631	7.8793	1.94	3.53	0.79	1.34	2.1	3.53	0.85
Hs.153639	AA485609	811066	0.9331	1.9879	2.13	2.4	0.91	3.05	2.16	3.05	0.85
Hs.184261	W05514	299274	0.3936	0.8581	2.18	2.18	0.8	2.24	3.5	3.5	0.85
Hs.4788	R96527	199645	5.7438	13.9961	2.44	3.34	1.38	2.75	2.28	3.34	0.85
Hs.191460	AA701640	433564	1.0731	2.1071	1.96	2.33	1.04	3.61	0.88	3.61	0.85
Hs.8324	AA490825	824304	3.731	7.4391	1.99	1.52	1.38	3.51	1.56	3.51	0.85
Hs.45070	N48259	282089	0.9999	1.3169	1.32	0.72	0.81	3.05	0.69	3.05	0.85

Table 3

Hs.166563	H73866	214537	1.9555	4.8667	2.49	1.99	2.6	3.28	2.08	3.28	0.85
Hs.6147	AA447688	813603	0.4975	0.7623	1.53	0.74	3.17	0.92	1.31	3.17	0.85
Hs.26076	N34426	277384	1.8231	4.1186	2.26	1.31	2.08	1.89	3.76	3.76	0.85
Hs.135860	T98506	122160	1.1856	2.7736	2.34	4.05	1.84	1.77	1.7	4.05	0.84
Hs.106210	AA449516	785663	7.2458	17.3162	2.39	1.5	1.16	3.99	2.91	3.99	0.84
Hs.157080	AA495859	768379	1.4707	2.8847	1.96	1.09	1.26	1.64	3.86	3.86	0.84
Hs.80426	AA477082	739993	5.0387	10.3182	2.05	3.4	1.19	1.46	2.14	3.4	0.84
Hs.28561	AA464593	812974	1.3498	2.6763	1.98	1.1	3.19	1.12	2.53	3.19	0.84
Hs.44166	W94009	357531	3.0501	7.9855	2.62	2.65	1.88	3.87	2.08	3.87	0.84
Hs.18479	AA069549	529276	3.0846	6.3678	2.06	3.44	1.14	2.24	1.44	3.44	0.83
Hs.216259	AA704421	450983	3.4776	8.9207	2.57	2.16	2.51	3.5	2.1	3.5	0.83
Hs.219681	AA449821	788617	1.7439	4.0643	2.33	2.33	2.19	1	3.8	3.8	0.83
Hs.43277	N22913	266727	1.1782	2.4342	2.07	3.44	0.88	2.94	1	3.44	0.83
Hs.42343	N63425	277956	1.0307	1.6948	1.64	0.77	1.11	1.44	3.26	3.26	0.83
Hs.44295	N32019	260068	3.1023	8.8817	2.86	2.52	1.67	4.57	2.69	4.57	0.83
Hs.22935	R43323	32770	5.6626	13.9499	2.46	1.54	1.84	3.95	2.52	3.95	0.83
Hs.38282	N50904	281045	0.591	1.2636	2.14	1.3	1.47	2.58	3.2	3.2	0.83
Hs.22900	W74359	345069	0.8893	2.1027	2.36	2.36	2.24	1.66	3.21	3.21	0.83
Hs.118857	AA669359	884842	114.2018	194.5788	1.7	0.67	3.1	1.43	1.61	3.1	0.83
Hs.193519	AA280676	705265	0.3316	0.7641	2.3	1.7	0.7	4.59	2.22	4.59	0.83
Hs.169464	AA705423	462188	0.1115	0.278	2.49	2.6	0.98	3.68	2.72	3.68	0.83
Hs.19012	H85272	249606	0.6594	1.7137	2.6	3.88	1.06	2.82	2.64	3.88	0.83
Hs.7862	W84627	356863	3.5419	7.6446	2.16	1.92	2.26	3.88	0.57	3.88	0.83
Hs.218913	AA620709	1049218	2.4896	3.6919	1.48	1.08	1.03	3.31	0.51	3.31	0.82
Hs.99548	AA461509	795833	0.4216	0.8193	1.94	3.09	1.56	1.51	1.62	3.09	0.82
Hs.219172	AA432108	784155	2.4931	5.2399	2.1	2.26	1.63	3	1.52	3	0.82
Hs.74267	AA434088	837904	131.4919	280.4863	2.13	2.3	1.07	4.02	1.14	4.02	0.82
Hs.83164	AA464342	809901	0.8154	1.6853	2.07	4.13	1.65	0.99	1.49	4.13	0.82
Hs.21602	W16715	301504	0.7102	1.0786	1.52	3.74	0.83	0.9	0.61	3.74	0.82
Hs.23259	AA463453	811775	4.0187	9.4552	2.35	2.24	1.79	3.24	2.14	3.24	0.82
Hs.218539	R34273	136070	7.2429	12.5408	1.73	0.83	0.72	3.17	2.2	3.17	0.82
Hs.184744	AA620597	951325	3.7076	7.2044	1.94	3.15	0.83	2.02	1.77	3.15	0.82
Hs.8122	AA436269	754358	0.958	2.1318	2.23	2.54	0.95	1.14	4.28	4.28	0.82
Hs.99908	AA133212	490805	24.1381	56.8583	2.36	2.49	1.47	3.08	2.38	3.08	0.82
Hs.22529	R67283	41888	23.4253	46.2564	1.97	1.28	1.37	3.94	1.31	3.94	0.82

Table 3

Hs.165438	H71713	213682	14.7056	18.9941	1.29	0.3	3.05	0.75	1.07	3.05	0.82
Hs.1100	N50603	280735	3.1455	7.3257	2.33	3.18	1.28	2.99	1.87	3.18	0.82
Hs.31498	AA421845	754563	0.1869	0.4479	2.4	0.96	1.8	2.95	3.87	3.87	0.82
Hs.37501	AA418999	755416	1.4186	2.3541	1.66	1.21	0.91	3.42	1.1	3.42	0.82
Hs.31522	H82848	198820	0.1105	0.1203	1.09	0.63	3.03	0.11	0.58	3.03	0.81
Hs.122677	AA009627	365543	0.2113	0.5162	2.44	3.15	2.93	2.75	0.95	3.15	0.81
Hs.82285	AA598487	898123	7.1728	16.6832	2.33	2.07	1.17	3.8	2.27	3.8	0.81
Hs.217156	AA121753	564537	1.793	4.8969	2.73	2.18	0.85	4.92	2.97	4.92	0.81
Hs.21083	H23173	52424	0.9199	2.3955	2.6	2.97	1.69	3.53	2.22	3.53	0.81
Hs.218667	AA156674	502326	0.2336	0.4762	2.04	1.56	1.43	2.02	3.15	3.15	0.81
Hs.183601	AA453774	813707	0.8804	1.8975	2.16	4.81	1.05	1.8	0.95	4.81	0.81
Hs.194534	H56594	231355	0.2598	0.575	2.21	2.16	0.74	4.97	0.98	4.97	0.81
Hs.26505	AA478473	786608	14.1083	44.6007	3.16	4.97	2.17	2.99	2.51	4.97	0.81
Hs.163295	N30517	265060	6.8121	15.0298	2.21	3.27	1.37	2.28	1.91	3.27	0.81
Hs.18714	W93212	415064	1.421	3.8748	2.73	2.98	1.41	3.83	2.69	3.83	0.81
Hs.220301	AA015850	361485	2.0218	4.1599	2.06	1.57	0.91	3.85	1.9	3.85	0.8
Hs.71832	AA147552	505425	0.2002	0.4198	2.1	1.15	1.68	3.53	2.03	3.53	0.8
Hs.18901	AA009770	429802	1.1455	3.2928	2.87	2.94	1.07	2.81	4.67	4.67	0.8
Hs.107010	R98903	206867	0.4704	0.726	1.54	3.07	1.34	0.9	0.86	3.07	0.8
Hs.516	AA036881	472008	1.7894	3.1106	1.74	4.09	0.94	1.11	0.81	4.09	0.8
Hs.21354	AA489297	842925	6.3881	11.4913	1.8	3.31	0.62	1.52	1.75	3.31	0.8
Hs.88111	AA621291	744605	0.1	0.1265	1.27	0.34	3.93	0.26	0.53	3.93	0.8
Hs.217456	AA490609	824122	5.9112	12.1054	2.05	1.9	3.53	1.51	1.26	3.53	0.79
Hs.153837	N47924	260200	1.3301	2.6082	1.96	3.29	1.44	2.25	0.87	3.29	0.79
Hs.184697	AA041445	376476	0.515	1.1515	2.24	3.65	0.9	2.22	2.18	3.65	0.79
Hs.8294	AA916413	1473421	1.2225	2.2395	1.83	1.53	1.35	1.41	3.04	3.04	0.79
Hs.6236	H01926	150135	39.2195	100.2732	2.56	2	1.28	4.19	2.75	4.19	0.79
Hs.105684	N77514	246541	13.0369	26.8489	2.06	3.28	1.44	1.81	1.72	3.28	0.79
Hs.125059	H62801	206595	0.5545	0.8346	1.51	0.5	1.11	1.37	3.05	3.05	0.79
Hs.98013	AA405984	743071	0.6496	1.2407	1.91	0.99	4.88	0.77	1.01	4.88	0.79
Hs.182278	H70774	214006	0.1	0.1736	1.74	0.11	1.66	2.17	3.01	3.01	0.79
Hs.25897	R52161	154323	0.9523	1.7989	1.89	1.49	0.79	2.23	3.05	3.05	0.79
Hs.477	AA442370	758222	0.6433	1.1857	1.84	3.95	1.36	0.87	1.19	3.95	0.78
Hs.146278	H95956	249953	0.1108	0.2304	2.08	0.82	3.39	1.53	2.57	3.39	0.78
Hs.219294	AA190747	627273	0.6954	1.0496	1.51	0.41	0.88	3.24	1.51	3.24	0.78

Table 3

Hs.87268	AA252968	666879	102.3732	213.9361	2.09	1.22	0.85	1.75	4.53	4.53	0.78
Hs.6657	W01974	294089	2.5997	5.5534	2.14	2.13	1.22	2.05	3.14	3.14	0.78
Hs.214064	AA504492	825356	1.7673	3.5133	1.99	1.1	3.31	2.32	1.23	3.31	0.78
Hs.27207	AA017133	362628	0.5313	0.9358	1.76	1.22	1.69	1.02	3.12	3.12	0.78
Hs.219682	T83997	113206	1.4404	3.3456	2.32	3.77	1.01	2.49	2.02	3.77	0.78
Hs.68731	AA404293	758366	0.426	0.7655	1.8	2.1	1.11	3.27	0.71	3.27	0.78
Hs.14632	N75055	299723	4.6225	10.1373	2.19	2.79	0.58	1.92	3.48	3.48	0.78
Hs.216724	AA403072	758347	0.2992	0.4974	1.66	1.45	0.5	1.01	3.69	3.69	0.77
Hs.120884	AA705686	435149	6.9968	12.7736	1.83	1.76	0.58	3.82	1.15	3.82	0.77
Hs.115537	AA452058	786302	0.6907	1.4872	2.15	3.26	2.19	1.45	1.71	3.26	0.77
Hs.193519	AA280676	705265	1.0166	2.647	2.6	2.34	0.92	4.81	2.33	4.81	0.77
Hs.17388	R23408	34560	0.3483	0.6011	1.73	1.25	0.55	1.24	3.87	3.87	0.77
Hs.183294	W37763	322154	2.1904	5.2252	2.39	2.69	0.6	4.19	2.06	4.19	0.77
Hs.33245	AA733022	399112	0.5989	1.3192	2.2	4.03	1.13	2.02	1.64	4.03	0.77
Hs.57860	T48366	74187	4.6365	7.557	1.63	0.67	1.35	1.39	3.11	3.11	0.77
Hs.184326	AA633993	858292	3.9684	9.6504	2.43	2.93	1.07	3.24	2.48	3.24	0.77
Hs.22939	AA677070	454159	3.7994	7.7995	2.05	1.6	1.02	3.45	2.15	3.45	0.77
Hs.66187	R17180	31813	0.1996	0.4717	2.36	2.79	0.46	4.14	2.06	4.14	0.77
Hs.70333	R16603	129606	3.1064	7.3513	2.37	2.07	1.61	2.68	3.11	3.11	0.77
Hs.180414	H64147	209383	80.8627	178.9523	2.21	3.18	1.05	2.64	1.98	3.18	0.77
Hs.169384	W69184	343699	1.5887	3.4932	2.2	1.94	3.9	1.99	0.97	3.9	0.77
Hs.70573	AA677077	454175	0.7829	1.9737	2.52	2.68	1.64	2.67	3.09	3.09	0.77
Hs.47166	N63604	289057	1.5212	2.5865	1.7	2.69	3.07	0.5	0.54	3.07	0.76
Hs.45046	N40170	276371	0.3529	0.9118	2.58	2.16	2.47	3.17	2.54	3.17	0.76
Hs.19904	R07167	126795	0.6851	1.5237	2.22	2.1	1.22	4.32	1.25	4.32	0.76
Hs.117970	AA782337	857603	6.0526	14.6304	2.42	3.45	1.55	2.57	2.1	3.45	0.76
Hs.180481	AA190764	626861	4.163	10.2714	2.47	4.36	1.96	1.59	1.95	4.36	0.76
Hs.74867	AA490192	823723	2.5214	6.1155	2.43	2.13	1.7	3.15	2.73	3.15	0.76
Hs.13740	T70810	108265	3.6267	8.3833	2.31	1.71	1.52	2.78	3.24	3.24	0.76
Hs.109144	AA132065	504253	3.9855	7.7289	1.94	3.19	1.07	1.42	2.08	3.19	0.76
Hs.43231	AA233376	666663	0.6428	1.2201	1.9	0.97	1.14	4.34	1.15	4.34	0.76
Hs.108689	AA608556	950678	0.2756	0.4005	1.45	0.35	4.14	0.71	0.61	4.14	0.76
Hs.218760	N68719	293078	1.4483	1.9797	1.37	0.96	0.44	3.52	0.55	3.52	0.76
Hs.184122	AA400128	743217	0.83	1.5608	1.88	2.18	0.66	1.25	3.44	3.44	0.76
Hs.21486	AA486367	840691	3.9511	7.8807	1.99	1.72	3.07	1.59	1.6	3.07	0.75

Table 3

Hs.22269	AA450336	785542	0.4138	0.8472	2.05	4.12	1.77	1.01	1.28	4.12	0.75
Hs.10729	H58119	205745	23.7582	54.6055	2.3	3.09	0.77	2.77	2.56	3.09	0.75
Hs.162077	AA479978	754025	0.7654	1.3884	1.81	0.6	3.72	1.41	1.53	3.72	0.75
Hs.30212	AA625651	745333	8.3498	18.8916	2.26	1.68	2.84	3.39	1.14	3.39	0.75
Hs.80624	AA432100	784162	27.7924	76.1364	2.74	3.18	2.24	2.72	2.82	3.18	0.75
Hs.67052	AA064945	529147	15.88	32.3384	2.04	1.77	1.48	3.16	1.74	3.16	0.75
Hs.163545	R31758	134829	0.4734	0.9432	1.99	3.47	1.06	2.14	1.3	3.47	0.75
Hs.217449	N93403	307189	3.7224	7.4844	2.01	1.1	3.04	1.81	2.09	3.04	0.75
Hs.219248	N44296	273075	1.6425	3.8979	2.37	1.48	1.32	4.05	2.64	4.05	0.75
Hs.171957	AA190941	626822	0.1643	0.4527	2.76	3.73	2.11	2.64	2.54	3.73	0.75
Hs.219484	R01682	123649	2.8032	5.2104	1.86	1.62	0.83	3.31	1.68	3.31	0.74
Hs.102171	H62387	236333	0.9424	2.3297	2.47	1.84	1.65	1.43	4.96	4.96	0.74
Hs.173352	R36144	137211	2.7773	8.5782	3.09	2.75	2.77	4.55	2.29	4.55	0.74
Hs.21286	H15950	48454	0.2904	0.4265	1.47	0.73	3.65	0.89	0.61	3.65	0.74
Hs.28646	R65798	140103	2.5029	6.0403	2.41	4.82	1.25	2.29	1.3	4.82	0.74
Hs.180946	AA026170	469235	3.2958	5.8567	1.78	3.65	0.78	1.41	1.27	3.65	0.74
Hs.46609	AA136964	491069	0.4409	0.8032	1.82	3.04	1.05	1.1	2.1	3.04	0.74
Hs.84316	AA774638	399318	25.0605	57.1943	2.28	3.91	1.58	1.67	1.98	3.91	0.74
Hs.63302	R10292	128970	0.9059	1.383	1.53	3.06	0.98	1.11	0.96	3.06	0.73
Hs.216220	N79738	289599	6.7624	17.3453	2.56	1.63	1.61	2.81	4.2	4.2	0.73
Hs.218071	AA424706	755409	17.0354	26.3402	1.55	1.62	0.51	3.01	1.04	3.01	0.73
Hs.204168	AA420982	730412	0.2109	0.4872	2.31	1.26	2.13	3.55	2.3	3.55	0.73
Hs.102702	N56858	277426	3.9212	8.2162	2.1	1.52	0.8	1.92	4.15	4.15	0.73
Hs.3136	AA018676	362755	2.0716	4.7328	2.28	2.63	1.03	3.29	2.2	3.29	0.73
Hs.197502	H82974	198924	1.598	2.9339	1.84	1.5	1.12	1.6	3.12	3.12	0.73
Hs.5862	N73536	295923	8.8506	21.0708	2.38	2.2	1.37	3.49	2.47	3.49	0.73
Hs.211470	H83067	198807	0.5654	0.8231	1.46	0.97	0.82	3.43	0.61	3.43	0.73
Hs.218479	AA126115	511428	27.2203	54.8228	2.01	0.62	2.24	2.06	3.13	3.13	0.72
Hs.159406	R60730	42225	0.3222	0.8196	2.54	4.88	1.11	2.58	1.6	4.88	0.72
Hs.75703	H62985	205633	3.2528	8.6375	2.66	4.46	2.45	2.84	0.87	4.46	0.72
Hs.43691	N35259	271935	1.0354	2.3218	2.24	2.02	1.63	3.44	1.87	3.44	0.72
Hs.83429	H54629	203132	24.1326	69.9148	2.9	2.66	3.37	2.67	2.89	3.37	0.72
Hs.8768	AA497109	897527	1.8198	3.8083	2.09	3.59	1.16	2.55	1.07	3.59	0.72
Hs.46981	N49899	243653	1.5577	2.1918	1.41	0.68	0.87	3.3	0.78	3.3	0.72
Hs.6762	AA701379	435509	9.39	22.5957	2.41	2.14	1.09	4.82	1.56	4.82	0.72

Table 3

Hs.73875	W94165	357626	1.0049	2.4679	2.46	1.59	1.86	1.52	4.86	4.86	0.72
Hs.217777	W69668	343631	0.5919	1.5189	2.57	3.42	1.56	2.62	2.68	3.42	0.72
Hs.43697	AA463830	796542	1.2688	2.5387	2	3.8	1.18	1.54	1.48	3.8	0.72
Hs.4269	R37165	27330	0.3299	0.7591	2.3	0.96	1.86	3.43	2.96	3.43	0.72
Hs.29379	N64405	290261	3.2403	7.1928	2.22	0.87	2.04	3.77	2.2	3.77	0.72
Hs.22247	AA455087	812294	0.4937	0.9958	2.02	3.18	0.9	2.04	1.95	3.18	0.72
Hs.29205	H50839	194297	1.4023	3.053	2.18	1.82	0.75	3.67	2.46	3.67	0.72
Hs.155596	N62514	288796	1.4391	2.8725	2	0.54	3.66	1.28	2.5	3.66	0.71
Hs.196604	AA664406	868652	3.3302	6.3958	1.92	1.27	1.46	1.47	3.49	3.49	0.71
Hs.148027	N74956	295551	7.8437	22.0064	2.81	2.49	1.52	4.43	2.77	4.43	0.71
Hs.216934	AA115310	511459	11.4652	28.4475	2.48	1.66	2.09	2.28	3.9	3.9	0.71
Hs.77273	AA676955	897158	93.5768	199.4211	2.13	2.33	1.55	3.29	1.35	3.29	0.71
Hs.16184	AA133547	586844	5.7833	12.8687	2.23	2.07	1.27	3.56	2	3.56	0.71
Hs.104904	AA430205	781401	3.5183	4.8238	1.37	0.51	1.21	0.73	3.04	3.04	0.71
Hs.5836	AA488765	824723	7.5972	17.2954	2.28	3.15	1.6	2.46	1.9	3.15	0.71
Hs.13456	T78909	108864	0.414	1.0504	2.54	2.85	2.25	1.43	3.61	3.61	0.71
Hs.216289	AA609783	1031963	2.2767	2.8752	1.26	0.55	0.55	3.19	0.77	3.19	0.71
Hs.26813	AA504631	825603	19.4344	46.8808	2.41	3.53	1.88	2.53	1.7	3.53	0.71
Hs.81424	AA486001	843094	38.5849	91.059	2.36	3.12	0.98	2.59	2.75	3.12	0.71
Hs.33979	N22901	266712	2.5232	6.0974	2.42	2.35	1.25	3.65	2.41	3.65	0.7
Hs.217779	H93463	230224	0.3185	0.5736	1.8	0.8	1.29	3.45	1.66	3.45	0.7
Hs.178439	AA496133	757198	1.188	1.9207	1.62	0.83	4.43	0.51	0.7	4.43	0.7
Hs.212162	AA411655	753278	2.7386	5.6545	2.06	2.02	2.07	0.86	3.3	3.3	0.7
Hs.10724	N52373	246041	3.0001	6.8471	2.28	3.07	1.54	2.63	1.9	3.07	0.7
Hs.79362	AA412237	726471	0.6134	1.5501	2.53	1.57	1.27	4.56	2.71	4.56	0.7
Hs.14376	AA676961	897153	13.7413	26.4643	1.93	4.16	0.66	1.66	1.23	4.16	0.7
Hs.24156	AA598996	897733	11.0939	31.7446	2.86	1.8	2.93	4.08	2.63	4.08	0.7
Hs.154729	N31292	266720	0.4239	0.8024	1.89	1.55	1.3	3.13	1.59	3.13	0.7
Hs.111039	AA481349	756480	0.1	0.1989	1.99	3.33	0.49	2.09	2.04	3.33	0.7
Hs.12296	N48293	279575	1.0354	2.5009	2.42	2.74	1.37	4.04	1.52	4.04	0.69
Hs.8769	W47641	324307	0.529	1.0858	2.05	1.78	1.6	3.08	1.75	3.08	0.69
Hs.172772	AA630017	884692	4.7379	9.7521	2.06	0.93	0.95	2.37	3.98	3.98	0.69
Hs.44198	AA489199	825005	8.9758	21.6438	2.41	2.95	0.53	3.39	2.77	3.39	0.69
Hs.172589	R22308	130845	3.3503	6.9665	2.08	3.11	2.03	1.67	1.5	3.11	0.69
Hs.98073	AA410310	754474	5.0471	8.6676	1.72	0.92	1.43	1.22	3.3	3.3	0.69

Table 3

Hs.181916	W95016	415134	1.4287	3.4818	2.44	4.99	1.49	2.14	1.13	4.99	0.69
Hs.190013	AA436158	754367	1.4592	3.2861	2.25	0.81	2.78	4	1.42	4	0.68
Hs.40719	AA018671	362756	1.0817	1.8019	1.67	0.87	0.4	3.18	2.21	3.18	0.68
Hs.17757	N95011	305253	2.3595	4.6709	1.98	0.82	2.17	1.48	3.45	3.45	0.68
Hs.58239	AA620407	950995	4.2778	9.4878	2.22	2.78	1.13	3.15	1.8	3.15	0.68
Hs.154668	AA428074	773426	4.4207	11.2942	2.55	2.9	1.39	3.56	2.37	3.56	0.68
Hs.77900	H22698	51362	7.0351	16.0802	2.29	3.71	1.41	2.44	1.58	3.71	0.68
Hs.6387	H63706	209246	11.6184	28.9043	2.49	2.52	0.99	4.2	2.23	4.2	0.68
Hs.79295	AA485773	840384	12.5846	25.2117	2	3.47	1.24	1.2	2.1	3.47	0.68
Hs.23729	AA236840	669359	2.5923	5.5544	2.14	0.98	0.7	2.15	4.74	4.74	0.68
Hs.56876	AA032198	375650	0.8003	1.2076	1.51	0.64	0.71	1.59	3.1	3.1	0.68
Hs.41895	H93482	230251	14.7516	37.0054	2.51	4.35	1.6	1.86	2.22	4.35	0.67
Hs.218290	AA150301	491486	10.2398	23.061	2.25	2.38	1.5	3.19	1.95	3.19	0.67
Hs.206770	AA455280	810037	3.314	6.4572	1.95	1.59	1.68	1.33	3.19	3.19	0.67
Hs.22488	AA425879	773402	2.4371	5.0647	2.08	1.8	0.52	3.14	2.86	3.14	0.67
Hs.47135	AA788970	1240220	2.8175	6.9115	2.45	2.86	0.4	3.57	2.98	3.57	0.67
Hs.83530	AA485608	811064	3.5867	8.325	2.32	2.37	1.27	2.38	3.27	3.27	0.67
Hs.44708	N44907	271899	1.1329	2.3975	2.12	1.47	0.98	2.18	3.84	3.84	0.67
Hs.203232	R61297	42452	24.6889	64.49	2.61	2.08	2.25	3.48	2.65	3.48	0.67
Hs.14799	AA404988	712330	1.4602	3.1614	2.16	3.35	1.17	2.45	1.69	3.35	0.67
Hs.119684	T71272	110226	0.1	0.195	1.95	2.3	0.95	1.34	3.21	3.21	0.66
Hs.125359	AA428836	769686	0.5232	1.133	2.17	4.51	1.18	1.87	1.11	4.51	0.66
Hs.91715	AA007515	429352	0.5278	1.1733	2.22	1.78	0.83	4.27	2.02	4.27	0.66
Hs.4198	AA489738	823682	2.1906	3.5638	1.63	1.08	0.77	3.03	1.63	3.03	0.66
Hs.1327	AA885311	1461664	1.2364	2.7328	2.21	2.28	1.05	3.55	1.96	3.55	0.66
Hs.220160	AA279422	704277	1.2354	2.8219	2.28	3.73	0.7	2.61	2.09	3.73	0.66
Hs.216680	N59138	287656	0.8961	1.4416	1.61	1.31	0.74	3	1.39	3	0.66
Hs.182217	AA282159	712888	3.3065	6.4308	1.94	3.03	0.92	2.09	1.74	3.03	0.66
Hs.187655	AA394152	726551	0.8093	1.4695	1.82	1	0.83	4.08	1.36	4.08	0.66
Hs.219256	H17239	50975	0.5067	0.809	1.6	0.91	0.95	0.96	3.56	3.56	0.66
Hs.10842	AA458549	811956	12.2803	33.9952	2.77	2.56	2	4.57	1.94	4.57	0.66
Hs.203218	T72259	85561	0.1	0.2017	2.02	4.04	1.18	1.53	1.32	4.04	0.66
Hs.91389	H11467	47671	1.8628	3.4855	1.87	1.76	0.49	2.17	3.07	3.07	0.65
Hs.840	AA478279	740925	2.7306	5.8828	2.15	1.3	3.59	2.39	1.34	3.59	0.65
Hs.86434	AA428136	773527	1.3575	3.5062	2.58	1.67	2.99	2.65	3.03	3.03	0.65

Table 3

Hs.217456	W32408	321359	2.4972	4.9192	1.97	1.66	3.13	1.45	1.64	3.13	0.65
Hs.75617	AA430540	769959	0.2373	0.4289	1.81	1.03	3.83	0.64	1.73	3.83	0.65
Hs.183292	AA287741	701256	0.1	0.1799	1.8	1.54	3.83	0.74	1.09	3.83	0.65
Hs.152720	AA478524	784744	5.1964	11.3795	2.19	3.32	1.17	2.49	1.77	3.32	0.65
Hs.172801	AA419192	755474	10.6743	28.4369	2.66	2.29	1.88	4.6	1.89	4.6	0.65
Hs.155924	N40889	256911	0.1169	0.2039	1.74	1.75	0.89	3.35	0.99	3.35	0.64
Hs.56845	R92806	197176	34.5225	75.392	2.18	3.16	1.39	2.5	1.68	3.16	0.64
Hs.30888	R10896	129146	10.9582	25.8308	2.36	4.15	1.35	1.8	2.12	4.15	0.64
Hs.82554	N63988	289496	1.9366	3.9434	2.04	2.36	3.15	1.63	1.01	3.15	0.64
Hs.213909	N53644	282108	1.0895	2.9685	2.72	3.95	2.15	2.94	1.86	3.95	0.64
Hs.95051	AA416733	731223	2.0568	4.5853	2.23	1.35	1.54	2.73	3.29	3.29	0.64
Hs.11930	W90211	418138	0.6084	1.6547	2.72	2.83	1.91	3.89	2.24	3.89	0.64
Hs.59594	AA402435	726786	1.7129	4.4123	2.58	3.7	1.93	2.02	2.65	3.7	0.64
Hs.169387	N43819	271684	8.0384	18.7795	2.34	1.42	1.81	4.12	1.99	4.12	0.64
Hs.83715	H29484	49970	11.0338	27.0743	2.45	1.92	1.78	2.15	3.96	3.96	0.63
Hs.44307	N32085	260187	1.7233	4.783	2.78	2.95	2.48	3.11	2.56	3.11	0.63
Hs.78991	AA278240	703479	0.7642	1.7868	2.34	1.75	1.07	2.99	3.55	3.55	0.63
Hs.26009	R61871	43072	0.636	1.4336	2.25	1.34	1.73	3.83	2.12	3.83	0.63
Hs.184522	AA496993	897536	0.4044	0.8451	2.09	0.61	2.4	3.03	2.32	3.03	0.63
Hs.6653	H12290	48289	1.3644	2.3624	1.73	0.84	0.48	3.5	2.11	3.5	0.63
Hs.184411	AA437093	757325	0.1	0.176	1.76	3.4	0.07	2.74	0.84	3.4	0.63
Hs.77613	AA453176	788109	1.5752	3.0942	1.96	1.18	0.92	2.72	3.03	3.03	0.63
Hs.217770	AA447947	786169	0.9549	1.985	2.08	1.65	3.26	1.71	1.69	3.26	0.63
Hs.27768	AA699908	435291	1.943	3.4509	1.78	1.54	1.3	3.11	1.16	3.11	0.63
Hs.195496	R93621	198093	3.3692	7.0295	2.09	2.18	2.2	3.23	0.73	3.23	0.63
Hs.59507	AA174008	595090	16.1221	26.0725	1.62	1.88	0.65	3.24	0.7	3.24	0.62
Hs.76313	AA598982	897720	0.8603	1.8956	2.2	4.06	0.61	1.15	2.99	4.06	0.62
Hs.218756	AA490985	824588	0.654	1.412	2.16	1.34	1.04	4.15	2.11	4.15	0.62
Hs.100030	AA676590	882488	0.279	0.4284	1.54	0.34	3.01	1.51	1.28	3.01	0.62
Hs.33981	H47627	193617	1.9004	3.3193	1.75	1.42	0.58	4.45	0.53	4.45	0.62
Hs.75528	AA446682	783629	5.7844	15.4112	2.66	2.22	1.09	4.81	2.53	4.81	0.62
Hs.103180	AA001815	428215	30.6442	80.2992	2.62	4.59	1.61	2.2	2.08	4.59	0.62
Hs.24781	AA877618	1160618	0.8659	1.5926	1.84	0.5	0.57	4.88	1.4	4.88	0.62
Hs.6196	AA148199	590615	0.1	0.1738	1.74	4.05	1.1	0.93	0.86	4.05	0.62
Hs.44162	N46796	277163	10.9904	34.2882	3.12	2.99	2.08	4.89	2.52	4.89	0.62

Table 3

Hs.171776	H90219	240634	1.7997	3.8181	2.12	3.01	1.15	2.24	2.08	3.01	0.62
Hs.24135	AA451978	786640	8.7497	16.4152	1.88	3.11	1.04	1.55	1.81	3.11	0.62
Hs.177713	N49121	279741	0.1513	0.3619	2.39	1.91	3.23	2.81	1.62	3.23	0.62
Hs.219552	AA461390	796152	8.3659	18.4539	2.21	3.36	1.3	1.69	2.46	3.36	0.61
Hs.193326	AA434090	837908	4.5521	9.0211	1.98	1.52	1.02	3.26	2.13	3.26	0.61
Hs.75344	AA888182	1492147	109.2523	284.5149	2.6	2.71	2.04	2.26	3.4	3.4	0.61
Hs.214742	AA620591	951313	5.7871	13.0599	2.26	1.31	1.28	2.01	4.42	4.42	0.61
Hs.83954	AA056096	380898	16.8675	44.0495	2.61	2.48	2.77	3.23	1.97	3.23	0.61
Hs.17109	AA775257	878596	2.5542	5.5357	2.17	2.09	1.52	4.37	0.7	4.37	0.61
Hs.177469	AA101173	563860	0.1453	0.1681	1.16	0.3	0.16	3.92	0.25	3.92	0.61
Hs.4888	AA630734	856354	19.108	47.9479	2.51	3.68	1.74	2.73	1.88	3.68	0.61
Hs.15627	AA405227	742839	15.0611	37.4331	2.49	2.3	1.41	3.28	2.96	3.28	0.61
Hs.198365	AA678065	430614	7.2864	16.0407	2.2	3.05	1.5	1.82	2.44	3.05	0.61
Hs.146847	AA134813	502486	3.0157	7.5186	2.49	2.86	1.52	2.44	3.15	3.15	0.61
Hs.217672	W69814	343932	2.156	4.7962	2.22	3.32	1.36	2.69	1.54	3.32	0.6
Hs.217700	AA045230	487704	4.1169	8.5186	2.07	4.16	1.18	2.16	0.76	4.16	0.6
Hs.113821	H23049	51749	0.8334	1.7444	2.09	4.48	0.58	2.36	0.95	4.48	0.6
Hs.79022	AA418077	767765	0.8285	1.6352	1.97	3.33	0.95	1.88	1.73	3.33	0.6
Hs.75362	W24499	308038	1.9784	3.5278	1.78	1.59	1.18	3.04	1.32	3.04	0.6
Hs.111219	R11047	129227	4.695	11.3558	2.42	1.47	3.27	2.72	2.21	3.27	0.6
Hs.13328	AA449703	785928	2.6947	5.1387	1.91	1.11	1.85	1.63	3.05	3.05	0.6
Hs.75415	AA670408	878798	694.7241	1752.3737	2.52	2.89	2.58	3.17	1.45	3.17	0.6
Hs.4770	AA521297	827163	6.7747	15.8053	2.33	1.96	1.3	2.89	3.19	3.19	0.6
Hs.178272	AA453418	788201	1.0878	3.0456	2.8	2.41	1.91	4.03	2.84	4.03	0.59
Hs.11611	AA451811	795277	0.2435	0.5587	2.29	1.62	2.4	3.3	1.86	3.3	0.59
Hs.47554	N52875	283617	0.8249	1.5013	1.82	3.48	0.82	1.61	1.38	3.48	0.59
Hs.183656	T95504	120544	0.9011	1.0623	1.18	0.54	0.48	3.38	0.31	3.38	0.59
Hs.111650	AA446907	784255	11.1888	27.7427	2.48	2.95	1.09	3.94	1.94	3.94	0.59
Hs.24322	AA486175	840803	38.7444	79.5505	2.05	3.23	1.62	1.72	1.65	3.23	0.59
Hs.89267	AA284067	700778	0.6463	1.5208	2.35	2.39	1.19	3.24	2.59	3.24	0.59
Hs.40583	AA431986	782209	3.2644	8.7975	2.69	2.06	1.85	4.34	2.54	4.34	0.59
Hs.105635	AA479272	754260	3.7021	7.824	2.11	1.43	1.34	3.65	2.03	3.65	0.59
Hs.78452	W47073	325062	0.8019	1.9321	2.41	2.44	1.34	2.07	3.78	3.78	0.59
Hs.202890	AA443039	811813	4.7361	8.26	1.74	1.61	0.93	1.13	3.31	3.31	0.59
Hs.215276	AA481069	814702	8.9656	21.0533	2.35	3.36	1.19	2.84	2.01	3.36	0.58

Table 3

Hs.61779	AA195387	665500	1.1818	3.3772	2.86	2.97	1.7	4.39	2.37	4.39	0.58
Hs.5151	AA126755	490612	1.7667	2.2293	1.26	0.79	3.45	0.58	0.22	3.45	0.58
Hs.219873	AA621202	744395	9.8935	19.4847	1.97	1.82	0.83	1.98	3.25	3.25	0.58
Hs.28329	AA452357	786545	3.9814	6.7587	1.7	3.25	1.4	0.83	1.3	3.25	0.58
Hs.50476	AA682626	431284	0.7293	1.4704	2.02	1.19	3.66	1.58	1.64	3.66	0.58
Hs.173362	AA029963	470179	0.1	0.1743	1.74	4.12	1.1	0.91	0.85	4.12	0.58
Hs.181301	AA236689	687875	1.5235	3.284	2.16	2.14	3.1	1.56	1.83	3.1	0.57
Hs.1098	AA456833	815563	1.2984	2.9997	2.31	1.46	2.66	0.98	4.15	4.15	0.57
Hs.1787	T75041	22731	0.3098	0.44	1.42	3.09	0.47	1.58	0.54	3.09	0.57
Hs.83006	R08561	127396	14.8742	30.265	2.03	1.41	1.36	2.23	3.14	3.14	0.57
Hs.79530	AA490547	823616	12.202	37.4216	3.07	2.97	1.8	4.51	2.99	4.51	0.57
Hs.48756	AA129861	490730	0.6035	1.2083	2	1.22	1.96	1.75	3.08	3.08	0.57
Hs.10862	R85387	274529	3.6253	4.4638	1.23	0.62	0.37	3.34	0.59	3.34	0.56
Hs.38614	H67292	229573	4.0734	8.8298	2.17	2.59	0.64	3.03	2.41	3.03	0.56
Hs.26402	H60038	205715	3.1101	6.4947	2.09	2.26	1.12	3.03	1.94	3.03	0.56
Hs.220211	AA486041	843276	73.7543	109.6552	1.49	0.6	1.45	0.73	3.17	3.17	0.56
Hs.169370	N32396	267431	0.5328	1.0701	2.01	3.43	1.39	1.75	1.46	3.43	0.56
Hs.2869	AA442853	757873	0.1	0.2006	2.01	3.76	2.18	1.25	0.83	3.76	0.56
Hs.213562	AA496097	757144	7.3261	10.5862	1.45	0.62	3.7	0.4	1.05	3.7	0.55
Hs.57655	AA495818	768393	0.9091	1.5477	1.7	0.65	1.39	1.27	3.5	3.5	0.55
Hs.197335	AA461136	796263	3.3946	7.0646	2.08	4.1	0.6	2.24	1.38	4.1	0.55
Hs.28794	AA455846	811652	1.3398	2.5873	1.93	0.51	2.09	0.8	4.32	4.32	0.55
Hs.9265	W86823	416436	13.6177	29.0641	2.13	1.8	0.77	3.42	2.54	3.42	0.55
Hs.93841	AA029838	470122	1.3544	2.36	1.74	4.5	0.61	0.82	1.04	4.5	0.55
Hs.85981	AA195088	665280	0.1122	0.2375	2.12	1.4	0.88	3.63	2.55	3.63	0.55
Hs.216106	AA489265	842871	2.254	5.6842	2.52	2.55	1.43	1.97	4.15	4.15	0.54
Hs.220066	AA489138	824933	6.3348	12.2197	1.93	1.74	0.98	4.12	0.88	4.12	0.54
Hs.172788	N76567	245174	0.6545	1.7683	2.7	2.12	2.4	2.15	4.13	4.13	0.54
Hs.219828	R63515	138728	1.244	2.3583	1.9	1.13	1.51	1.78	3.17	3.17	0.54
Hs.68829	AA088326	511343	0.3143	0.7743	2.46	2.83	1.61	3.73	1.68	3.73	0.54
Hs.211988	AA479906	772904	0.1	0.1806	1.81	1.1	3.14	1.88	1.1	3.14	0.54
Hs.102479	R17324	32083	2.1677	5.3372	2.46	2.48	0.97	2.84	3.55	3.55	0.53
Hs.7381	AA460900	796759	7.0823	17.9284	2.53	4.98	1.29	2.43	1.42	4.98	0.53
Hs.16542	AA056588	509546	1.8087	3.1414	1.74	1.84	0.75	1.1	3.26	3.26	0.53
Hs.37449	N73703	289283	1.0641	2.7038	2.54	2.48	2.72	3.72	1.24	3.72	0.53

Table 3

Hs.220223	H17412	50704	1.4098	2.6807	1.9	1.48	0.62	4.26	1.24	4.26	0.53
Hs.157438	N51386	283233	1.3315	3.2246	2.42	2.49	1.8	2.07	3.32	3.32	0.52
Hs.76159	AA486138	840768	0.1	0.227	2.27	1.82	1.75	2.49	3.02	3.02	0.52
Hs.53563	AA017620	361204	0.1159	0.2152	1.86	3.94	0.8	1.34	1.35	3.94	0.52
Hs.172816	R72075	155716	0.4269	0.8023	1.88	3.2	1.42	0.92	1.98	3.2	0.52
Hs.68090	AA448140	782748	0.1712	0.4017	2.35	2.26	2.04	1.67	3.42	3.42	0.52
Hs.213179	AA485458	811079	2.0926	5.5706	2.66	4.41	1.78	2.03	2.42	4.41	0.52
Hs.220044	AA099236	489495	1.1176	2.717	2.43	3.49	2.3	1.39	2.55	3.49	0.52
Hs.219462	R06575	126412	2.1584	4.809	2.23	2.52	0.8	3.76	1.83	3.76	0.52
Hs.75290	T71460	85171	52.9071	120.2177	2.27	3.81	1.29	2.94	1.05	3.81	0.51
Hs.129956	R06675	126490	1.0314	2.6275	2.55	2.89	1.67	3.4	2.23	3.4	0.51
Hs.25674	AA428341	769673	7.5027	10.8263	1.44	0.41	4.1	0.54	0.73	4.1	0.51
Hs.6650	AA668531	859832	7.9561	14.6017	1.84	1.39	0.87	3.33	1.75	3.33	0.5
Hs.93552	H97508	251961	0.9107	2.4431	2.68	2.21	1.94	4	2.58	4	0.5
Hs.79005	R79082	146123	0.9266	2.2153	2.39	1.53	1.93	3.54	2.57	3.54	0.5
Hs.176060	AA017698	361341	0.1	0.2284	2.28	1.29	1.24	4.69	1.92	4.69	0.5
Hs.2236	AA490263	823794	0.7526	1.5614	2.07	3.35	1.17	1.39	2.38	3.35	0.5
Hs.273	W78928	415698	8.3474	18.9751	2.27	3.52	2.71	1.19	1.68	3.52	0.5
Hs.102502	W46155	323 '96	0.163	0.4769	2.93	2.8	2.26	3.76	2.88	3.76	0.5
Hs.218780	R92123	195330	1.2484	2.5263	2.02	1.11	1.84	2.12	3.03	3.03	0.5
Hs.127799	H48706	201890	0.5889	1.4787	2.51	2.12	4.03	1.77	2.12	4.03	0.5
Hs.79101	AA083032	547058	3.3064	6.0222	1.82	1.44	0.97	3.57	1.31	3.57	0.49
Hs.26771	AA194966	665127	0.7592	2.2503	2.96	4.45	1.97	2.47	2.97	4.45	0.49
Hs.73821	AA010079	359184	1.8232	4.1945	2.3	2.26	2.41	1.47	3.06	3.06	0.49
Hs.75193	AA489699	824382	2.7605	5.6271	2.04	3.36	0.76	1.84	2.19	3.36	0.49
Hs.80887	R83836	193913	1.6936	3.3127	1.96	1.85	3.11	1.49	1.38	3.11	0.49
Hs.14562	AA282206	712884	0.8831	1.9576	2.22	2.05	1.06	2.42	3.34	3.34	0.49
Hs.51233	AA453916	788185	0.3795	0.894	2.36	3.18	1.77	1.71	2.77	3.18	0.49
Hs.216340	H14810	48801	4.5347	8.1443	1.8	1.63	1.01	1.16	3.39	3.39	0.48
Hs.8769	N57594	283398	0.7111	1.6143	2.27	2.44	1.36	3.14	2.13	3.14	0.48
Hs.157145	AA291772	725340	1.9282	3.5787	1.86	3.25	1.01	1.98	1.18	3.25	0.48
Hs.85838	AA133273	502151	0.1	0.116	1.16	0.5	3.2	0.5	0.44	3.2	0.48
Hs.215833	AA417805	752690	6.5794	18.0075	2.74	2.55	2.23	3.51	2.66	3.51	0.48
Hs.7063	H16401	49110	1.7407	2.5889	1.49	4.22	0.54	0.78	0.4	4.22	0.48
Hs.190255	AA496836	897592	1.3818	2.6663	1.93	3.28	1.71	1.59	1.14	3.28	0.48

Table 3

Hs.220028	AA150665	504705	30.2527	70.7617	2.34	3.37	0.84	2.99	2.15	3.37	0.47
Hs.164645	N21079	265006	3.8616	8.7164	2.26	4.14	1.76	1.52	1.61	4.14	0.47
Hs.75929	AA137109	491113	0.6229	1.4862	2.39	4.53	1.27	1.64	2.1	4.53	0.47
Hs.45105	N40997	279873	1.5079	2.4979	1.66	3.38	2.03	0.75	0.46	3.38	0.47
Hs.92384	R78724	144977	15.4435	31.9731	2.07	3.48	0.78	2.65	1.38	3.48	0.47
Hs.219096	AA121266	490178	1.3719	3.2622	2.38	1.67	2.31	3.36	2.17	3.36	0.47
Hs.220287	T97457	121436	12.6086	32.8975	2.61	1.99	4.68	1.25	2.52	4.68	0.47
Hs.81791	AA195113	665356	0.8813	2.0896	2.37	4.89	1.75	1.28	1.56	4.89	0.47
Hs.77854	H05140	45099	0.2992	0.5135	1.72	3.41	0.71	1.57	1.17	3.41	0.47
Hs.96418	AA447780	813821	0.8657	2.5949	3	2.55	2.85	2.69	3.9	3.9	0.47
Hs.25854	AA459227	814288	5.8149	8.9789	1.54	1.45	0.85	3.13	0.73	3.13	0.46
Hs.55058	AA412632	730288	1.2193	2.483	2.04	0.95	4.93	0.66	1.6	4.93	0.46
Hs.82510	AA055523	377348	0.1	0.199	1.99	4.05	0.78	1.77	1.37	4.05	0.45
Hs.100895	AA479308	754334	0.7717	1.8998	2.46	3.99	1.82	2.18	1.85	3.99	0.45
Hs.38022	N91307	292522	0.5727	1.1725	2.05	3.43	0.79	2.57	1.4	3.43	0.45
Hs.93213	H52672	235938	0.6932	1.236	1.78	1	3.2	0.9	2.03	3.2	0.45
Hs.56340	T59256	79503	2.2272	3.9833	1.79	2.59	0.54	3.25	0.78	3.25	0.44
Hs.216329	AA504844	825740	2.7179	6.5706	2.42	2.34	1.43	1.68	4.22	4.22	0.44
Hs.188540	R49124	38497	0.1154	0.2335	2.02	1.51	0.18	3.98	2.44	3.98	0.44
Hs.159223	AA434487	770868	0.3209	0.6636	2.07	2.29	1.5	3.55	0.92	3.55	0.44
Hs.30868	AA428418	770989	0.1	0.17	1.7	1.57	0.13	1.49	3.6	3.6	0.43
Hs.198711	W01197	278729	0.4307	1.0779	2.5	3.39	2.35	1.77	2.5	3.39	0.43
Hs.99636	AA701353	435492	1.268	2.2107	1.74	1.56	0.61	3.57	1.22	3.57	0.43
Hs.67055	AA284464	701579	0.6687	1.4134	2.11	2.34	1.16	1.42	3.53	3.53	0.43
Hs.152207	AA458637	813393	0.7593	1.8909	2.49	1.24	2.12	4.45	2.16	4.45	0.42
Hs.195448	N63623	289107	0.8875	2.2947	2.59	1.3	2.35	2.91	3.77	3.77	0.42
Hs.29036	R69798	141765	0.6256	1.1493	1.84	3.36	0.7	2.23	1.06	3.36	0.42
Hs.50742	AA424293	767023	0.3233	0.7022	2.17	1.22	1.63	3.47	2.37	3.47	0.42
Hs.173334	AA884897	1468220	6.6512	9.5795	1.44	1.27	0.36	3.02	1.1	3.02	0.42
Hs.63758	R49459	38253	1.8992	4.4395	2.34	1.9	1.5	3.46	2.49	3.46	0.41
Hs.576	N95761	308437	1.9017	4.1121	2.16	3.89	1.02	1.38	2.36	3.89	0.41
Hs.23544	AA449419	785549	2.216	3.2821	1.48	0.69	3.28	0.9	1.06	3.28	0.41
Hs.121993	AA777928	449504	0.3839	0.7864	2.05	1.97	1.23	1.17	3.82	3.82	0.41
Hs.108354	AA460893	796754	1.7344	4.1601	2.4	1.4	2.51	2.33	3.36	3.36	0.4
Hs.219830	N20328	264597	1.8401	4.4754	2.43	1.97	1.11	4.75	1.9	4.75	0.4

Table 3

Hs.128639	AA425014	768466	1.6444	3.8931	2.37	1.9	1.64	2.11	3.82	3.82	0.4
Hs.8697	T47693	71351	7.3561	13.7856	1.87	0.54	1.21	2.34	3.41	3.41	0.4
Hs.173637	AA001870	428166	0.9905	1.849	1.87	1.47	1.07	3.08	1.84	3.08	0.4
Hs.6844	N53214	246808	2.7568	3.9514	1.43	0.3	0.31	0.46	4.67	4.67	0.4
Hs.5188	AA063398	513200	9.5897	28.1927	2.94	2.08	2.99	3.85	2.84	3.85	0.39
Hs.169637	AA521015	826301	0.2667	0.6051	2.27	3.79	0.48	2.57	2.23	3.79	0.39
Hs.23635	R74357	143322	0.2202	0.5395	2.45	1.03	1.74	2.97	4.05	4.05	0.39
Hs.1355	H94487	243202	0.5181	1.2478	2.41	2.75	2.07	1.4	3.42	3.42	0.38
Hs.145612	AA126958	511633	2.0516	4.9292	2.4	1.62	2.27	1.88	3.84	3.84	0.38
Hs.28505	AA411876	730622	3.1531	6.4624	2.05	1.35	1.9	1.56	3.39	3.39	0.38
Hs.75586	H84153	249688	0.1122	0.1809	1.61	0.37	1.9	3.01	1.16	3.01	0.38
Hs.218068	H80749	248849	2.5613	6.1476	2.4	2.29	1.96	2.15	3.2	3.2	0.38
Hs.76252	AA452627	788285	0.5388	1.3821	2.57	4.13	1.4	2.12	2.61	4.13	0.38
Hs.17767	H17860	50276	6.3378	14.0654	2.22	1.42	2.33	1.99	3.14	3.14	0.37
Hs.180628	AA045529	487348	2.3975	5.7013	2.38	2.45	1.35	3.51	2.2	3.51	0.37
Hs.74034	AA487560	841664	5.8603	16.247	2.77	4.43	1.03	2.69	2.94	4.43	0.37
Hs.109284	W48685	324856	0.3447	0.7642	2.22	3.44	1.27	2.15	2.01	3.44	0.36
Hs.23071	N47388	280602	12.5055	25.529	2.04	2.23	1.14	3.97	0.82	3.97	0.34
Hs.128087	AA456376	813254	0.3733	0.7633	2.04	3.21	1.62	2.09	1.26	3.21	0.34
Hs.74621	AA455969	812048	3.8307	8.2739	2.16	2.02	3.47	1.64	1.5	3.47	0.34
Hs.6973	R15832	53110	6.4133	13.6501	2.13	2.18	1.13	1.97	3.24	3.24	0.33
Hs.24702	AA406320	754591	0.2927	0.8887	3.04	4.59	2.74	2.61	2.2	4.59	0.33
Hs.38125	AA504832	825715	0.591	1.6069	2.72	3.14	2.36	2.39	2.98	3.14	0.33
Hs.14425	R55747	40718	0.8275	1.6446	1.99	1.18	0.98	1.72	4.07	4.07	0.33
Hs.25195	W56771	340657	1.0178	1.6957	1.67	1.06	1.03	0.83	3.75	3.75	0.33
Hs.97624	AA403061	726874	0.5626	1.0089	1.79	1.4	1.78	0.83	3.16	3.16	0.33
Hs.214359	N28524	263883	1.1015	3.0902	2.81	1.44	2.2	2.67	4.91	4.91	0.32
Hs.83114	R40946	28475	1.2198	2.5243	2.07	1.25	0.64	3.65	2.73	3.65	0.32
Hs.98309	AA418955	768018	0.3962	1.0521	2.66	4.08	2.83	1.97	1.74	4.08	0.31
Hs.220226	H58708	206287	1.4704	2.6305	1.79	2.19	1.05	3.12	0.8	3.12	0.3
Hs.183722	AA521292	827168	6.2748	18.9871	3.03	4.6	2.64	2.83	2.03	4.6	0.3
Hs.78909	AA480880	814576	0.1	0.1735	1.73	0.02	0.96	4.77	1.19	4.77	0.3
Hs.183487	AA479795	740604	0.9804	1.934	1.97	1.28	3.11	1.85	1.65	3.11	0.29
Hs.46679	AA443602	771274	0.1	0.1103	1.1	0.01	3.25	0.94	0.21	3.25	0.29
Hs.4206	AA465598	814235	8.5745	19.4283	2.27	4.75	1.71	1.65	0.96	4.75	0.29

Table 3

Hs.178542	N78902	300015	0.3933	1.0137	2.58	1.67	2.45	4.37	1.82	4.37	0.28
Hs.42964	N21233	264449	0.1	0.1633	1.63	0.08	3.4	1.46	1.59	3.4	#REF!
Hs.29074	R71391	155064	0.4359	1.1216	2.57	1.73	1.77	2.11	4.68	4.68	0.28
Hs.96	AA458838	814353	5.1217	12.9893	2.54	1.99	2.09	4.25	1.81	4.25	0.27
Hs.46721	N47444	280699	0.6994	1.5374	2.2	4.2	0.72	2.47	1.41	4.2	0.26
Hs.9075	H01164	149934	2.0589	4.7172	2.29	2.23	3.18	1.43	2.32	3.18	0.26
Hs.107318	R24591	34526	0.4636	0.7926	1.71	0.78	0.93	0.89	4.23	4.23	0.26
Hs.620	H44784	188036	6.2067	10.2985	1.66	1.71	1.36	3.05	0.52	3.05	0.26
Hs.31832	N47604	277848	3.0704	5.2933	1.72	3.66	1.06	1.76	0.41	3.66	0.26
Hs.216328	AA010932	359781	6.3953	13.5547	2.12	1.29	1.2	2.28	3.71	3.71	0.25
Hs.177534	AA056608	509569	2.7183	4.5392	1.67	0.62	4.77	0.7	0.59	4.77	0.25
Hs.62402	AA890663	1405689	2.3644	5.0767	2.15	1.18	0.83	2.14	4.43	4.43	0.25
Hs.93005	H57310	204737	0.8586	1.9662	2.29	4.09	2.46	1.53	1.08	4.09	0.25
Hs.213510	H01788	150466	5.7522	7.0405	1.22	0.4	3.49	0.54	0.48	3.49	0.23
Hs.198951	T99280	122428	0.1	0.2606	2.61	4.3	1.47	2.36	2.29	4.3	0.22
Hs.188634	AA677924	431009	0.1	0.1365	1.36	0.76	3.87	0.34	0.5	3.87	0.21
Hs.219876	AA490846	823964	0.8488	1.9905	2.35	3.04	1.46	2.32	2.55	3.04	0.21
Hs.204154	AA663941	855707	2.9755	4.7619	1.6	1.36	4.08	0.59	0.38	4.08	0.21
Hs.20709	AA464601	812967	1.8753	2.7802	1.48	0.62	3.46	0.76	1.1	3.46	0.21
Hs.19978	AA707659	451707	5.075	12.0881	2.38	2.33	0.51	3.77	2.92	3.77	0.2
Hs.59735	W95801	358316	0.1	0.0895	0.9	0.17	3.27	0.01	0.13	3.27	0.2
Hs.117938	H87536	252259	0.3407	0.898	2.64	1.48	4.46	1.89	2.71	4.46	0.19
Hs.789	W42812	323238	7.9579	13.299	1.67	1.65	3.65	0.66	0.72	3.65	0.18
Hs.93005	N64741	293339	0.3739	1.1291	3.02	4.7	2.7	2.84	1.84	4.7	0.18
Hs.210586	AA424352	767075	1.6385	3.981	2.43	2.67	1.26	2.6	3.18	3.18	0.17
Hs.64025	R26526	132373	0.8469	1.5277	1.8	0.67	3.41	2.26	0.88	3.41	0.16
Hs.183109	AA011095	359661	15.1102	35.4903	2.35	1.53	1.26	2.53	4.08	4.08	0.16
Hs.99209	AA449120	785849	0.1	0.1624	1.62	0.89	4.07	0.21	1.32	4.07	0.16
Hs.117313	AA703449	450152	0.1532	0.3059	2	3.37	1.1	1.72	1.8	3.37	0.16
Hs.6553	AA425382	773157	0.2787	0.6131	2.2	4.1	0.97	2.54	1.2	4.1	0.15
Hs.158225	T96804	121406	0.1	0.1629	1.63	0.93	3.06	1.23	1.29	3.06	0.15
Hs.789	W46900	324437	2.313	3.7699	1.63	1.3	3.71	0.71	0.81	3.71	0.14
Hs.75329	AA456394	813266	1.0469	2.3914	2.28	3.29	0.89	2.94	2.02	3.29	0.13
Hs.44424	N33041	270343	0.3731	0.699	1.87	1.57	1.22	4.12	0.58	4.12	0.12
Hs.31396	H15913	159470	0.1252	0.2075	1.66	0.9	0.53	4.36	0.84	4.36	0.12

Hs.33533	AA023022	364352	0.1	0.1102	1.1	0.08	1.19	3.03	0.11	3.03	0.12
Hs.219459	N44673	271952	1.3358	2.0487	1.53	3.31	0.5	1.59	0.72	3.31	0.11
Hs.143434	R25234	132304	0.8096	1.3572	1.68	1.68	1	3.03	1	3.03	0.11
Hs.21858	R95691	199367	0.3919	0.8301	2.12	3.34	1.45	1.2	2.47	3.34	0.11
Hs.219331	R74415	156962	1.4157	3.4415	2.43	2.29	4.93	1.21	1.29	4.93	0.1
Hs.41267	AA521394	826072	0.1889	0.5135	2.72	4.91	2.33	1.74	1.89	4.91	0.1
Hs.79432	T98151	121722	0.4594	0.7734	1.68	1.5	3.49	0.9	0.83	3.49	0.07
Hs.214890	AA088177	488246	0.5162	1.1912	2.31	3.72	2.19	1.71	1.62	3.72	0.05
Hs.215184	AA480828	810729	0.3049	0.6052	1.98	0.29	3.91	0.8	2.95	3.91	0.05

Table 4

Clone	Sequence
810813	Sequence 100
810512	Sequence 1005
853906	Sequence 1007
429129	Sequence 1013
460666	Sequence 1017
856167	Sequence 102
855745	Sequence 105
141972	Sequence 1063
429349	Sequence 1071
1384851	Sequence 1077
418192	Sequence 1087
796921	Sequence 1090
235155	Sequence 1095
731343	Sequence 110
796309	Sequence 111
122288	Sequence 1117
813678	Sequence 1118
322553	Sequence 1120
742685	Sequence 1125
31866	Sequence 113
428223	Sequence 1140
1474323	Sequence 1140
296010	Sequence 1142
841008	Sequence 1145
898218	Sequence 115
291345	Sequence 1153
133637	Sequence 1159
256984	Sequence 116
34905	Sequence 1161
1435300	Sequence 1176
782446	Sequence 1177
700527	Sequence 1190
815539	Sequence 1202
260303	Sequence 1215
307249	Sequence 1233
856289	Sequence 1235
22918	Sequence 1240
760148	Sequence 1242
810321	Sequence 1252
428773	Sequence 1257
192242	Sequence 126
251685	Sequence 1261
810017	Sequence 1271
377692	Sequence 1278
589115	Sequence 128
590264	Sequence 129
877832	Sequence 1297
767277	Sequence 130
758293	Sequence 1300
839904	Sequence 1300
825442	Sequence 131
357031	Sequence 1338
40139	Sequence 1351
813426	Sequence 1369
811883	Sequence 1373
897690	Sequence 1387
196612	Sequence 1388
664975	Sequence 14
549933	Sequence 140
725877	Sequence 1404

Table 4

Clone	Sequence
460403	Sequence 1428
451587	Sequence 148
241880	Sequence 1486
309288	Sequence 1500
346861	Sequence 1516
486591	Sequence 1525
845415	Sequence 1532
154654	Sequence 1546
510679	Sequence 1574
511632	Sequence 1584
646753	Sequence 1589
290399	Sequence 1607
784253	Sequence 1617
609980	Sequence 1626
399604	Sequence 1659
378488	Sequence 1667
365515	Sequence 1674
810326	Sequence 1683
298716	Sequence 1697
200136	Sequence 1703
813845	Sequence 1713
45801	Sequence 1715
566383	Sequence 1717
47459	Sequence 1717
306901	Sequence 1721
241432	Sequence 1721
48167	Sequence 1738
897910	Sequence 175
823850	Sequence 1754
811582	Sequence 1757
796469	Sequence 1769
35642	Sequence 179
785391	Sequence 179
258167	Sequence 1798
281010	Sequence 1802
951010	Sequence 1802
272576	Sequence 1803
509688	Sequence 1828
204545	Sequence 1851
32609	Sequence 1877
713019	Sequence 1900
268736	Sequence 1902
298612	Sequence 1906
320509	Sequence 1910
470092	Sequence 1919
563598	Sequence 192
26462	Sequence 1920
41302	Sequence 1925
131362	Sequence 193
292042	Sequence 1931
742977	Sequence 1931
782513	Sequence 1941
782513	Sequence 1941
882522	Sequence 195
293325	Sequence 1976
282720	Sequence 2003
841282	Sequence 2007
813983	Sequence 2017
753653	Sequence 2018
343609	Sequence 2024

Table 4

Clone	Sequence
824802	Sequence 2026
133303	Sequence 2028
796539	Sequence 2028
897865	Sequence 2028
841046	Sequence 203
781047	Sequence 2041
506548	Sequence 2046
898098	Sequence 2056
1032103	Sequence 2059
824602	Sequence 206
292806	Sequence 2065
842769	Sequence 2077
324225	Sequence 2079
824531	Sequence 2091
417730	Sequence 2106
810408	Sequence 2118
811606	Sequence 2126
343736	Sequence 215
302541	Sequence 2198
431955	Sequence 2198
378461	Sequence 22
209756	Sequence 2211
666159	Sequence 222
323074	Sequence 2231
28444	Sequence 2237
110744	Sequence 2252
279810	Sequence 2258
502767	Sequence 2269
124824	Sequence 2277
486110	Sequence 2286
684879	Sequence 2298
342640	Sequence 2314
768443	Sequence 2318
51532	Sequence 2342
809557	Sequence 2345
244767	Sequence 2348
51918	Sequence 2353
769751	Sequence 2353
526184	Sequence 2354
210405	Sequence 2356
884301	Sequence 2358
814080	Sequence 2366
26616	Sequence 237
796323	Sequence 2375
79710	Sequence 2381
868368	Sequence 239
789204	Sequence 2392
740907	Sequence 2401
291255	Sequence 2435
47900	Sequence 2439
324492	Sequence 2441
703581	Sequence 2442
1404774	Sequence 2450
786680	Sequence 2451
856447	Sequence 2456
85634	Sequence 2458
51447	Sequence 2459
755599	Sequence 2460
949988	Sequence 25
741977	Sequence 2502

Table 4

Clone	Sequence
725533	Sequence 2506
1455566	Sequence 2507
855786	Sequence 251
50214	Sequence 2512
362059	Sequence 2520
24642	Sequence 2522
759163	Sequence 2525
1416782	Sequence 2533
855749	Sequence 2537
436094	Sequence 2543
783696	Sequence 2549
756556	Sequence 2551
785975	Sequence 2556
1409509	Sequence 2568
504372	Sequence 257
840788	Sequence 2572
1493175	Sequence 2578
810218	Sequence 258
840511	Sequence 2584
138369	Sequence 2593
868380	Sequence 2593
293635	Sequence 2594
586706	Sequence 2597
815017	Sequence 260
878182	Sequence 2613
712292	Sequence 2619
23185	Sequence 2620
283312	Sequence 2631
450060	Sequence 2636
325641	Sequence 2640
199635	Sequence 2640
214816	Sequence 2651
196992	Sequence 2654
136508	Sequence 2656
155806	Sequence 2656
840493	Sequence 266
785148	Sequence 2663
361323	Sequence 2671
770014	Sequence 2673
148021	Sequence 2679
309826	Sequence 2688
814798	Sequence 2705
435076	Sequence 2731
109153	Sequence 2734
814478	Sequence 2739
810242	Sequence 2742
144881	Sequence 275
203240	Sequence 2751
31093	Sequence 2778
823902	Sequence 278
66718	Sequence 2786
137457	Sequence 2806
727192	Sequence 2806
950926	Sequence 2810
126406	Sequence 2815
588915	Sequence 282
868332	Sequence 2829
1493160	Sequence 2839
290866	Sequence 2850
257414	Sequence 2850

Table 4

Clone	Sequence
122159	Sequence 2852
343072	Sequence 2860
345538	Sequence 2861
162775	Sequence 2873
321739	Sequence 2874
727551	Sequence 2874
81289	Sequence 2876
1455976	Sequence 2894
183337	Sequence 2907
773301	Sequence 2910
43826	Sequence 2919
278687	Sequence 2920
809627	Sequence 2939
509641	Sequence 2940
46180	Sequence 2965
755663	Sequence 2965
243741	Sequence 2976
814989	Sequence 2979
782503	Sequence 303
417711	Sequence 306
745347	Sequence 307
1470060	Sequence 309
767310	Sequence 32
898092	Sequence 320
854644	Sequence 322
773479	Sequence 325
809719	Sequence 33
760344	Sequence 337
897177	Sequence 34
753982	Sequence 344
260336	Sequence 347
1473304	Sequence 358
856489	Sequence 365
756378	Sequence 366
731236	Sequence 373
878373	Sequence 39
511586	Sequence 395
868304	Sequence 4
26711	Sequence 403
242706	Sequence 41
897641	Sequence 413
309499	Sequence 432
320455	Sequence 434
752640	Sequence 438
340722	Sequence 447
789182	Sequence 45
565733	Sequence 452
746152	Sequence 452
144902	Sequence 456
435858	Sequence 469
811069	Sequence 472
841203	Sequence 474
840677	Sequence 479
714106	Sequence 480
66815	Sequence 487
824117	Sequence 488
868212	Sequence 5
250654	Sequence 50
123926	Sequence 511
813823	Sequence 521

Table 4

Clone	Sequence
845355	Sequence 523
261472	Sequence 525
207082	Sequence 548
756600	Sequence 553
753400	Sequence 555
760282	Sequence 559
344759	Sequence 56
191603	Sequence 564
504661	Sequence 565
505032	Sequence 57
50888	Sequence 572
399536	Sequence 575
531862	Sequence 575
287676	Sequence 579
810899	Sequence 58
713230	Sequence 582
684655	Sequence 588
363103	Sequence 589
34795	Sequence 592
139009	Sequence 62
359835	Sequence 650
139009	Sequence 66
812244	Sequence 662
364840	Sequence 664
810754	Sequence 667
470393	Sequence 669
25517	Sequence 677
149910	Sequence 684
418279	Sequence 688
1472753	Sequence 693
796876	Sequence 697
781089	Sequence 71
841308	Sequence 719
80948	Sequence 730
435036	Sequence 739
786609	Sequence 746
897649	Sequence 746
80146	Sequence 756
758356	Sequence 758
324745	Sequence 771
73638	Sequence 78
595761	Sequence 783
755750	Sequence 787
810224	Sequence 788
855799	Sequence 799
755145	Sequence 8
772425	Sequence 800
826273	Sequence 801
233308	Sequence 804
839991	Sequence 807
970591	Sequence 81
840726	Sequence 82
263342	Sequence 820
842802	Sequence 821
153411	Sequence 83
292936	Sequence 833
809503	Sequence 836
509887	Sequence 837
592807	Sequence 843
204299	Sequence 846

Table 4

Clone	Sequence
491644	Sequence 85
768561	Sequence 87
856420	Sequence 884
796613	Sequence 886
841207	Sequence 887
809437	Sequence 889
142944	Sequence 893
133273	Sequence 9
785766	Sequence 906
261522	Sequence 910
291537	Sequence 924
361456	Sequence 93
504226	Sequence 94
341328	Sequence 943
811139	Sequence 948
380737	Sequence 95
417855	Sequence 952
122159	Sequence 959
489631	Sequence 972
1472689	Sequence 979
855547	Sequence 995

Table 5

Clone	Sequence
1055764	Sequence 109
154654	Sequence 1546
399604	Sequence 1659
461759	Sequence 1912
200656	Sequence 2261
212542	Sequence 2261
813678	Sequence 2332
85634	Sequence 2458
796613	Sequence 2546
174627	Sequence 2586
417711	Sequence 2591
811139	Sequence 2591
855547	Sequence 2591
898218	Sequence 2603
153411	Sequence 2623
120189	Sequence 2640
199635	Sequence 2640
259591	Sequence 2640
279319	Sequence 2640
325641	Sequence 2640
489519	Sequence 2720
115443	Sequence 2731
435076	Sequence 2731
46284	Sequence 2767
882522	Sequence 2833
1035889	Sequence 2856
122159	Sequence 2869
327676	Sequence 2878
590264	Sequence 2881
363103	Sequence 2906
753982	Sequence 344
451587	Sequence 680
810224	Sequence 788
491644	Sequence 85
809719	Sequence 864

Table 6

Clone	Sequence
897153	Sequence 103
730554	Sequence 1097
32083	Sequence 1103
768466	Sequence 1107
431803	Sequence 1157
841328	Sequence 1179
841314	Sequence 1228
432115	Sequence 1236
1460110	Sequence 1238
837904	Sequence 1241
759948	Sequence 1248
509479	Sequence 127
205745	Sequence 1291
233071	Sequence 1317
415064	Sequence 1327
345525	Sequence 1376
283723	Sequence 1408
809901	Sequence 1442
841664	Sequence 1456
129610	Sequence 1552
786673	Sequence 1558
754628	Sequence 1591
757404	Sequence 1598
884842	Sequence 1599
593223	Sequence 1607
126412	Sequence 1634
665356	Sequence 1646
853151	Sequence 1694
513200	Sequence 1699
429519	Sequence 17
289916	Sequence 1700
814235	Sequence 1702
898123	Sequence 1714
897527	Sequence 1722
245388	Sequence 1736
295986	Sequence 1747
196570	Sequence 1748
263227	Sequence 1748
299679	Sequence 1756
742839	Sequence 1763
416436	Sequence 1765
784162	Sequence 1767
50276	Sequence 1776
257323	Sequence 1777
430614	Sequence 18
809473	Sequence 180
144915	Sequence 1830
201890	Sequence 1845

Table 6

Clone	Sequenc
490178	Sequence 1850
768168	Sequence 1873
427980	Sequence 1905
214443	Sequence 1910
461759	Sequence 1912
825668	Sequence 1927
786544	Sequence 1934
739993	Sequence 1990
299154	Sequence 2001
843121	Sequence 2020
769673	Sequence 2037
307933	Sequence 2049
131979	Sequence 2060
811956	Sequence 2062
306921	Sequence 2067
180512	Sequence 2078
815040	Sequence 2081
814702	Sequence 2094
144977	Sequence 2096
428231	Sequence 2112
209246	Sequence 2124
789376	Sequence 2125
727278	Sequence 2132
510369	Sequence 2186
30473	Sequence 2211
841188	Sequence 2220
841261	Sequence 2220
853988	Sequence 2220
504555	Sequence 2237
200656	Sequence 2261
1471841	Sequence 2300
249688	Sequence 2307
296788	Sequence 2310
897164	Sequence 2310
197176	Sequence 2311
491113	Sequence 2326
755474	Sequence 2336
810729	Sequence 2351
143997	Sequence 2386
789232	Sequence 2394
123980	Sequence 2398
782193	Sequence 2408
122091	Sequence 2433
80374	Sequence 2449
293925	Sequence 2452
950445	Sequence 2454
221212	Sequence 2455
511850	Sequence 2477

Table 6

Clone	Sequ nce
209383	Sequenc 248
783629	Sequence 2486
897158	Sequence 2494
193913	Sequence 2559
564050	Sequence 2573
489626	Sequence 2587
840460	Sequence 2599
246541	Sequence 26
740925	Sequence 2608
357626	Sequence 2617
66686	Sequence 2633
66686	Sequence 2633
669443	Sequence 2635
120189	Sequence 2640
854701	Sequence 2643
666879	Sequence 2648
46715	Sequence 2679
563673	Sequence 2682
814306	Sequence 2691
767765	Sequence 2714
489519	Sequence 2720
469235	Sequence 2723
277537	Sequence 2771
843094	Sequence 2788
742798	Sequence 2791
416390	Sequence 2796
248039	Sequence 2816
878798	Sequence 2826
509495	Sequence 2902
485989	Sequence 2921
490805	Sequence 2930
869450	Sequence 2933
897835	Sequence 2934
856354	Sequence 2952
784744	Sequence 2961
840803	Sequence 316
199158	Sequence 355
591095	Sequence 356
154610	Sequence 412
814246	Sequence 423
502486	Sequence 47
236333	Sequence 482
809824	Sequence 484
139226	Sequence 485
203132	Sequence 485
586844	Sequence 486
1492147	Sequence 506
471742	Sequence 60

Table 6

Clone	Sequence
277163	Sequence 600
199645	Sequence 676
28098	Sequence 70
796227	Sequence 704
773345	Sequence 801
812144	Sequence 803
754126	Sequence 810
813179	Sequence 835
754358	Sequence 86
949944	Sequence 872
841633	Sequence 889
824723	Sequence 892
502367	Sequence 974

Table 7

Cluster ID	Clone	Avg. Norm	Avg. Tumor	Avg. Fold	Fold Mayo9	Fold Mayo11	Fold Mayo16	Fold Mayo19	Max Fold	Fold Mayo5	Fold Mayo318
Hs.179661	773479	38.32	324.2	8.5	13.5	1.1	14.2	5	14.2	3.1	3.2
Hs.81915	1476065	22.81	170.32	7.5	5	3.5	16.7	4.7	16.7	5.8	2.6
Hs.14623	856447	10.16	126.36	12.4	31.6	7.9	6.2	4.1	31.6	1.3	3.3
Hs.216259	882510	44.42	169	3.8	4.1	2.1	5.2	3.8	5.2	2.5	4.2
Hs.155530	824602	5.9	45.19	7.7	3.8	5.3	13.8	7.9	13.8	2.3	4.5
Hs.54451	460403	2.17	32.1	14.8	26.8	23.3	5.3	3.6	26.8	1.5	3.5
Hs.194698	856289	10.07	45.04	4.5	4.8	2.9	5.5	4.7	5.5	2.5	3.8
Hs.198574	626206	4.34	24.18	5.6	3	2.9	10.1	6.3	10.1	1.7	3.1
Hs.101850	436094	3.29	28.48	8.7	12.9	4.1	10.1	7.6	12.9	1.2	4.3
Hs.77899	341328	2.49	8.81	3.5	5.6	1.3	4.9	2.4	5.6	1	6.9
Hs.82985	796613	0.86	10.17	11.9	16.7	7.7	7.5	15.6	16.7	0.8	3.6
Hs.75692	1493527	2.02	7.69	3.8	3.6	2.7	6.4	2.5	6.4	1.3	6.3
Hs.6823	815556	0.98	8.13	8.3	12.6	3.3	10.6	6.6	12.6	1.7	3.8
Hs.179657	810017	0.82	5.62	6.9	13.4	4.3	4.7	5.1	13.4	1.8	4.8
Hs.36232	1343726	0.58	4.15	7.1	3.6	1.9	15.3	7.8	15.3	3.2	2.2
Hs.151513	878689	0.98	4.23	4.3	8	0.9	6.8	1.6	8	1.5	5
Hs.9914	434768	0.24	2.41	10	4.4	26.3	3.7	5.4	26.3	2.4	10.6
Hs.118110	811024	0.53	3.47	6.6	6.1	3.4	10.9	6	10.9	1.4	5.4
Hs.479	745249	0.97	2.53	2.6	3.1	1.2	3.9	2.2	3.9	1	5.2
Hs.179735	195162	0.72	2.52	3.5	3.2	1.4	2.5	7.1	7.1	2.2	4.8
Hs.21454	1388373	0.27	1.35	4.9	3	1.2	1.6	13.9	13.9	3.3	0.8
Hs.84229	447167	0.16	1.3	8.4	2.8	3.7	22.3	4.7	22.3	2.7	4.6
Hs.206507	303099	0.23	0.64	2.8	3.1	1.7	2.6	3.7	3.7	1.3	4.1
Hs.158164	841340	0.1	0.36	3.6	1.7	4.5	4.8	3.2	4.8	2.1	4.3
Hs.173894	289337	2.48	50.41	20.3	12.6	11.7	53.5	3.4	53.5	6.8	3.9
Hs.75725	45544	4.84	36.97	7.6	8.9	0.4	14	7.4	14	5.8	3.6
Hs.214794	66560	19.54	540.08	27.6	44.9	4.5	58.4	2.7	58.4	9.1	1.6
Hs.83848	855749	140.71	450.26	3.2	6.3	0.8	3.7	2	6.3	3	3.9
Hs.204802	449112	147.1	365.45	2.5	4.1	0.8	3.5	1.5	4.1	3.2	1.4
Hs.146360	509641	65.28	416.53	6.4	6.7	7.1	2.9	8.8	8.8	1.3	3
Hs.140	855745	3.83	123.81	32.4	17.8	7.4	101.6	2.7	101.6	5.6	2.1

Table 7

Hs.153958	283312	59.49	228.57	3.8	6.5	1.7	3.3	3.9	6.5	1.5	3.1
Hs.76325	80948	21.65	160.43	7.4	12.2	1.8	14.9	0.7	14.9	3.2	0.5
Hs.1390	122241	43.87	220.08	5	5	3.3	4.8	7	7	2.1	3
Hs.79274	786680	18.64	132.3	7.1	14.3	1.9	9.2	3	14.3	1	4
Hs.1600	884425	32.05	127.49	4	3.9	1.9	7.7	2.4	7.7	1.7	3.5
Hs.180877	950574	54.46	184.5	3.4	4.2	1.2	4.4	3.7	4.4	2.5	3.1
Hs.146354	212165	46.26	146	3.2	4.6	0.3	5.1	2.7	5.1	3.4	3.7
Hs.146360	755599	16.57	108.27	6.5	6.3	12.8	3.1	3.9	12.8	1.4	3.6
Hs.159626	781089	22.75	96.52	4.2	2.8	2.2	8.7	3.2	8.7	3.1	4.2
Hs.119756	38816	42.81	129.3	3	3.1	1	4.6	3.4	4.6	3.7	1.5
Hs.93668	250869	18.33	134.69	7.3	10.3	5.4	7.1	6.5	10.3	4.4	10.2
Hs.24003	356992	17.95	54.19	3	4.1	1	3.5	3.5	4.1	3.2	9.5
Hs.85201	47481	9.42	76.31	8.1	2.9	17.6	5	7	17.6	5.7	5.4
Hs.14231	713230	21.51	78.96	3.7	4.3	0.9	2.7	6.7	6.7	3.1	2.2
Hs.216752	1455641	11.98	101.14	8.4	10	7	4.9	11.8	11.8	1.5	3.1
Hs.75117	242952	19.7	93.97	4.8	7.1	1.3	6.3	4.3	7.1	3.4	2.6
Hs.213265	796161	19.35	99.81	5.2	5.8	2.2	7.2	5.5	7.2	2	3.8
Hs.194694	767405	6.2	60.68	9.8	1.6	21.2	7.7	8.7	21.2	4.5	3.7
Hs.107139	491644	4.11	47.04	11.5	2.5	31.6	6.3	5.4	31.6	0.5	3.8
Hs.35120	309288	6.24	72.06	11.5	18.4	2.9	17.2	7.7	18.4	2.1	3.2
Hs.35962	418279	5.16	62.39	12.1	1.5	19.3	21.2	6.5	21.2	4.1	7.4
Hs.213632	810754	3.02	63.05	20.8	10.3	25.6	35.1	12.4	35.1	4.8	9.1
Hs.47359	282144	21.99	43.7	2	0.5	0.9	3.4	3.2	3.4	1.9	4.8
Hs.116107	782446	5.63	38.5	6.8	3.7	18.1	2.4	3.1	18.1	3	4.4
Hs.93668	366815	9.01	63.94	7.1	7.1	5.8	8.2	7.3	8.2	4.4	10.2
Hs.74711	395898	16.1	58.49	3.6	5.6	1.9	4.4	2.7	5.6	0.3	3.3
Hs.172665	47384	8.24	51.17	6.2	6.1	2.5	9.5	6.8	9.5	3.2	4.6
Hs.7327	664975	8.13	52.73	6.5	2.4	7.4	6.7	9.5	9.5	1.7	4.2
Hs.62273	951241	10.02	42.51	4.2	2.9	2.2	7.1	4.8	7.1	3.6	3.1
Hs.7590	282720	9.83	37.46	3.8	3.6	4	4.5	3.2	4.5	3.6	6.6
Hs.15159	812244	11.71	40.7	3.5	2.2	2.6	3.6	5.5	5.5	2.2	3.7
Hs.215969	753400	5.96	32.96	5.5	10.3	1.7	5.9	4.3	10.3	2.9	4.1
Hs.7962	451587	1.97	27.36	13.9	8.8	4.4	28.6	13.7	28.6	6.3	7.3
Hs.21331	842767	5.88	29.74	5.1	2.6	3.1	8.4	6.1	8.4	1.3	4.5
Hs.5101	785707	5.23	34.12	6.5	6	4.1	6.6	9.4	9.4	5.8	5.4

Table 7

Hs.100132	261472	3.34	33.66	10.1	12.9	2.6	13.9	10.8	13.9	2.8	4.2
Hs.217512	845415	8.53	35.06	4.1	4	1.9	5.4	5.2	5.4	1.4	3.3
Hs.46967	772925	6.55	25.08	3.8	0.6	2.9	4.9	7	7	2.2	3
Hs.194794	51918	7.2	33.03	4.6	4.3	2.5	5.2	6.3	6.3	1.5	3.4
Hs.214402	203275	2.55	25.49	10	17.2	2.9	12.8	7	17.2	2.8	4.6
Hs.13340	745360	7.39	32.58	4.4	5.2	2.9	3.7	5.8	5.8	1.2	3.4
Hs.38842	234237	4.02	19.87	4.9	3.2	1	5.1	10.5	10.5	4.2	2.1
Hs.214182	898286	3.35	23.07	6.9	4.7	4.5	12.2	6.2	12.2	3.5	3.4
Hs.97977	742952	4.81	21.9	4.6	2.8	2	5.5	8	8	2.4	3.2
Hs.153998	363086	7.96	23.68	3	1.1	1.8	4.8	4.2	4.8	3.1	3.3
Hs.14355	297439	9.41	24.65	2.6	3	1.6	4	1.9	4	1	3.7
Hs.218464	151055	3.38	24.49	7.2	11	2.7	10.7	4.6	11	1.8	3.2
Hs.30464	826273	2.9	15.35	5.3	3.8	2.1	12.7	2.6	12.7	3.7	2.8
Hs.66394	50188	7.07	20.19	2.9	5.2	0.5	3.1	2.7	5.2	1.1	3.1
Hs.129913	361456	3.76	22.71	6	8.5	3.6	9.2	2.8	9.2	2.2	9.5
Hs.178743	292042	4.69	27.25	5.8	7.5	2	7.1	6.6	7.5	4.8	4.2
Hs.142838	788415	9.15	29.82	3.3	3.4	2.9	3.3	3.4	3.4	1.3	3.5
Hs.142495	757210	6.29	16.27	2.6	2.9	1.3	3	3.2	3.2	5.1	1.6
Hs.220317	191904	3.49	20	5.7	3.7	2.6	7.7	8.9	8.9	2.2	3.5
Hs.21577	813845	4.47	20.8	4.7	3.6	3	6.7	5.3	6.7	2	3.3
Hs.1578	796694	5.49	17.22	3.1	1.4	2.6	3.2	5.3	5.3	1.4	3.5
Hs.217402	210982	3.64	13.39	3.7	7.8	1.9	1.8	3.3	7.8	1	3.2
Hs.189834	784093	3.55	18.23	5.1	5.8	2.5	7.8	4.5	7.8	1.2	3
Hs.14839	740672	7.91	22.77	2.9	3.5	2	3.3	2.8	3.5	1.2	3
Hs.9880	767277	6.02	21.78	3.6	3.2	3	3.8	4.5	4.5	2.2	3.5
Hs.48855	292936	2.33	18.67	8	7.6	2.6	11.1	10.7	11.1	7.1	8.4
Hs.42650	451907	2.16	14.61	6.8	3.3	3.2	9.3	11.3	11.3	5.6	7.3
Hs.5092	1492304	3.37	10.22	3	2.8	1.8	3.7	3.8	3.8	2.3	7
Hs.194272	450060	0.98	12.49	12.7	10.4	14.7	23.4	2.5	23.4	3.9	3.5
Hs.200483	797042	1.67	9.72	5.8	2.3	3	4.4	13.6	13.6	4.5	1.5
Hs.110857	511632	4.43	17.1	3.9	4.1	2.8	4.9	3.6	4.9	1.5	3.1
Hs.81892	342640	2.95	12.37	4.2	0.4	5.2	7.3	3.9	7.3	5.3	4.7
Hs.109304	229560	4.04	13.76	3.4	2	2	5.3	4.4	5.3	3.3	1.3
Hs.77274	714106	1.28	11.13	8.7	16.2	10.1	2.2	6.1	16.2	1.5	6.6
Hs.203779	366971	3.21	15.64	4.9	3.4	4	6.3	5.8	6.3	3.4	2.2

Hs.1063	724387	3.73	12.61	3.4	3.2	1.7	3.1	5.4	5.4	3.5	3.8
Hs.182877	1475987	5.68	14.99	2.6	1.5	3.5	3.3	2.2	3.5	2.1	3.3
Hs.169544	753252	3.96	12.57	3.2	4.8	1.1	3.4	3.4	4.8	1.5	3.1
Hs.76391	815542	1.95	8.94	4.6	2.9	3.7	2	9.8	9.8	1.5	4.4
Hs.199147	129865	2.01	11.96	6	5.3	2.2	9.3	7	9.3	4.9	5.1
Hs.17409	1323448	1.3	7.63	5.9	1.9	14.1	4	3.5	14.1	2	3.3
Hs.197278	773322	2.86	9.83	3.4	5.5	1.1	5.5	1.7	5.5	1.1	6.3
Hs.220318	47096	3.49	13.59	3.9	4.9	1.8	5.1	3.8	5.1	2.5	3.6
Hs.59988	813586	3.34	13.73	4.1	4.6	3.1	4.1	4.6	4.6	3	5.3
Hs.215651	241365	3.05	11.81	3.9	4.5	1.2	5.8	4	5.8	4.8	4.1
Hs.39504	754588	3.37	13.06	3.9	3.6	2.3	5.1	4.6	5.1	1.7	4.6
Hs.80684	363103	2.15	11.09	5.1	4.9	4.5	7.9	3.3	7.9	3.6	4.9
Hs.77550	810899	2.81	11	3.9	1.6	2.5	5.9	5.7	5.9	5.2	3.3
Hs.8551	436155	2.78	13.27	4.8	5.8	3.1	4.9	5.3	5.8	1.9	4
Hs.182167	284661	1.21	5.7	4.7	1.2	1.3	12.8	3.6	12.8	3.4	1.3
Hs.75841	450307	2.11	9.25	4.4	7.3	1.7	4.3	4.3	7.3	3.2	3.9
Hs.22049	773512	2.29	9.12	4	3.5	6.6	3.9	1.9	6.6	2	4.6
Hs.180320	949988	4.25	10.24	2.4	3.1	3.5	1.7	1.4	3.5	2	3.2
Hs.80205	1469292	1.63	8.44	5.2	3.4	6.2	8.9	2.2	8.9	1.4	4.8
Hs.92395	257955	1.92	7.68	4	2.7	3	7.3	3	7.3	2.6	3.5
Hs.80988	138991	1.33	6.33	4.8	10.5	2.4	1.6	4.5	10.5	2.6	3.7
Hs.112607	1048601	1.55	7.34	4.7	3.4	3.1	9	3.5	9	1.3	3.2
Hs.77204	435076	2.52	9.01	3.6	2.3	2.8	5	4.2	5	5.1	5.5
Hs.196837	789147	2.01	8.17	4.1	6.9	1.1	5.8	2.4	6.9	2.9	4.4
Hs.14379	811562	1.82	6.1	3.4	7.3	0.9	4.1	1.1	7.3	1.5	3.5
Hs.204347	323077	3.43	10.9	3.2	3.2	2.8	3.8	2.9	3.8	1.8	3.3
Hs.3566	824799	1.93	8.86	4.6	4.9	2.1	4.6	6.7	6.7	2.2	3.3
Hs.169329	730361	2.73	7.48	2.7	0.9	4.5	2.1	3.5	4.5	2.9	4.7
Hs.114034	743041	1.96	7.68	3.9	4.7	0.6	3.8	6.5	6.5	3.2	4.1
Hs.80658	236034	1.3	10.25	7.9	9.7	5.3	8.4	8.1	9.7	4.8	8.2
Hs.115474	277112	2.13	9.39	4.4	4.4	2.6	5.8	4.9	5.8	1.7	3.2
Hs.70333	136534	2.94	7.29	2.5	1	3.5	2	3.4	3.5	2.6	4.1
Hs.216819	786504	1.82	5.05	2.8	0.6	4	2.8	3.7	4	3.7	6.5
Hs.159604	810321	0.89	4.02	4.5	0.6	3.2	1.2	13.2	13.2	3.2	6.2
Hs.215766	230235	3.17	8.97	2.8	3.2	2.2	2.7	3.2	3.2	1.3	3.7

Table 7

Hs.79375	812246	0.79	4.58	5.8	3.3	2.1	14.3	3.5	14.3	3.1	3.8
Hs.12045	436106	2.49	7.17	2.9	3.5	1.9	2.3	3.8	3.8	3.5	4.5
Hs.5199	796469	1.41	6.9	4.9	2.4	2.7	7.9	6.6	7.9	3	5.2
Hs.58589	346997	0.92	5.72	6.2	4.9	12	6.1	1.9	12	1.8	5
Hs.220311	244077	1.19	3.65	3.1	4.1	0.8	3.8	3.5	4.1	2.9	9.2
Hs.131189	594693	2.03	6.61	3.3	1.8	2.3	3.7	5.2	5.2	1.4	4.6
Hs.217554	813604	1.9	8.14	4.3	4.5	3.1	4.9	4.6	4.9	3.7	5.6
Hs.118962	299360	2.67	8.16	3.1	3.2	2.5	3.8	2.6	3.8	1.6	3.2
Hs.90625	824622	1.4	6.76	4.8	7.1	1.3	4.1	6.8	7.1	4.3	3.3
Hs.106843	768172	1.97	5.63	2.9	1.4	1.7	4.7	3.6	4.7	2.7	5
Hs.86945	1048804	1.18	6.08	5.1	4.6	0.3	7.8	7.8	7.8	1.7	7.6
Hs.214520	199337	1.91	6.34	3.3	1.7	2.3	4.4	4.8	4.8	2.7	3.2
Hs.4854	291057	0.94	4.94	5.3	3	3	9.7	5.3	9.7	4.9	3.1
Hs.189920	427811	0.98	3.58	3.7	9.3	0.9	3.6	0.9	9.3	1.7	3.6
Hs.61635	375682	1.18	4.51	3.8	7.6	1.3	3.2	3.2	7.6	0.7	3.2
Hs.44892	491184	1.81	4.64	2.6	1.6	0.6	3.2	4.9	4.9	1.6	3.3
Hs.167017	298231	1.46	4.55	3.1	6	1.7	3.1	1.6	6	1.1	3.4
Hs.54946	307249	1.1	4.72	4.3	0.5	8	2.5	6.1	8	1.1	5.9
Hs.46677	280375	1.07	5.19	4.9	2.7	3.4	8.1	5.2	8.1	3	4.3
Hs.23763	664968	1.46	4.8	3.3	0.7	2.3	4.3	6	6	3	2.4
Hs.198132	1292432	1.05	4.91	4.7	8.2	1	7.3	2.2	8.2	0.7	5.5
Hs.78867	785148	1	4.32	4.3	3.1	0.9	4.8	8.5	8.5	1.7	3.7
Hs.18552	279915	2	5.37	2.7	3.5	1.5	2.3	3.4	3.5	2.2	4.2
Hs.97803	742630	0.71	4.91	6.9	5	3.7	11.8	7	11.8	2.9	3.8
Hs.125078	503715	2.31	6.14	2.7	3.6	1.4	2	3.6	3.6	1.7	3.2
Hs.47378	753198	1.85	4.87	2.6	1.3	1.7	3	4.5	4.5	1.1	3.4
Hs.69517	782575	1.47	4.6	3.1	1.7	3.5	2.9	4.5	4.5	1.8	5.6
Hs.217678	491615	1.42	4.38	3.1	2.4	1	5.7	3.2	5.7	1.4	3.1
Hs.75671	49389	0.69	3.16	4.6	9	1.5	5.9	1.9	9	2.3	11.7
Hs.12017	811766	1.41	4.62	3.3	3.3	5.6	1.8	2.4	5.6	1.4	5.1
Hs.105806	433567	0.59	3.08	5.2	2.8	13.3	3.8	1.1	13.3	1.1	3.6
Hs.78056	345538	0.61	3.44	5.7	4.4	12.6	1.9	3.8	12.6	3.2	6.8
Hs.99418	812056	0.7	4.01	5.7	1.6	7.3	3.1	10.8	10.8	4.4	1.9
Hs.173205	884301	1.32	4.77	3.6	3.2	3.1	5.7	2.5	5.7	1.3	3.2
Hs.20621	810560	0.53	3.77	7	2.6	1	13.9	10.7	13.9	1.3	3.3

Table 7

Hs.18457	595697	0.93	3.84	4.1	7.9	1.2	5.5	1.9	7.9	1.5	3.3
Hs.38114	811590	1.77	5.31	3	1.6	2.5	4	3.9	4	1.2	3.6
Hs.141296	358083	1.66	4.14	2.5	3.7	1.4	3.2	1.7	3.7	1.2	4.2
Hs.57222	813318	1.24	4.88	3.9	4	2.3	5.6	3.8	5.6	1.4	5.1
Hs.218928	773421	1.44	4.41	3.1	3.2	1.3	3	4.7	4.7	1	3.6
Hs.6654	770082	1.01	3.67	3.6	6.3	1.2	3.6	3.5	6.3	1.6	6.7
Hs.133158	1435029	0.61	4.29	7.1	10.8	1.3	5.7	10.6	10.8	6.4	7.6
Hs.99011	771290	1.29	4.49	3.5	5	3.2	2.7	3.1	5	1.7	3.4
Hs.220129	815051	1.09	3.21	3	5.9	1.3	3.2	1.5	5.9	0.8	3.4
Hs.44155	767068	1.05	3.43	3.3	2.3	4.8	2.1	3.9	4.8	2.8	6.1
Hs.61635	784130	1.15	3.71	3.2	5.4	1.4	2.4	3.7	5.4	0.9	3.4
Hs.98658	781047	1.02	4.08	4	3.3	2.2	4.5	6	6	1.9	3.4
Hs.202541	38569	0.53	4.34	8.2	6.3	6	11.4	8.9	11.4	1.6	9.3
Hs.186814	452363	0.94	3.22	3.4	2.2	2.2	6.2	3.2	6.2	3	3.4
Hs.27519	193139	0.11	1.94	18.3	12.8	3.3	55.2	2	55.2	3.9	1.4
Hs.16743	110988	1.3	3.58	2.8	4.4	0.9	4	1.7	4.4	1.1	3.1
Hs.99185	786078	1.53	4.89	3.2	3.7	2.5	3	3.5	3.7	1.7	3.7
Hs.14894	109437	0.55	3.56	6.5	9.6	1.4	4.8	10.1	10.1	3.5	1.9
Hs.219427	272942	0.67	3.35	5	8.2	0.7	8	3.2	8.2	3.2	4.3
Hs.217837	809521	1.12	4.14	3.7	3.2	1.9	4.8	4.8	4.8	2.9	3.4
Hs.180903	110744	1.01	3.54	3.5	1.8	2.1	4.8	5.2	5.2	1.3	3.6
Hs.60878	704284	0.44	2.47	5.6	2.4	11.9	4.8	3.4	11.9	2	3
Hs.9029	454970	1.34	2.57	1.9	0.2	3.2	0.3	3.9	3.9	3.3	1.3
Hs.187693	824889	1.11	2.75	2.5	1.2	0.9	3.1	4.7	4.7	2.6	3.3
Hs.179565	809557	1.12	4.38	3.9	3	3.6	4.5	4.5	4.5	2.2	3.7
Hs.77695	357373	0.88	4.02	4.6	5.3	2.9	5.5	4.5	5.5	4.2	4.5
Hs.174051	206370	0.51	1.77	3.4	1.9	2.6	5.2	4.1	5.2	1.5	9.2
Hs.74090	451706	0.72	3.6	5	4.7	2.7	6.2	6.6	6.6	2.7	3.3
Hs.8878	825606	1.16	3.41	2.9	1.2	3.4	3.1	4	4	3.1	3.7
Hs.104985	782838	0.38	1.36	3.6	3.1	4.3	0.8	6	6	2	12.1
Hs.95835	810218	0.76	2.45	3.2	1.7	5.9	1.5	3.7	5.9	1.2	3.6
Hs.14559	504308	0.55	2.74	5	8.1	2.8	4.7	4.3	8.1	2.4	5.3
Hs.74519	770880	1.2	3.74	3.1	2.8	2.4	3.5	3.7	3.7	3.1	2.1
Hs.129055	504469	0.7	2.54	3.6	5.9	1.4	3.7	3.5	5.9	3.2	3.6
Hs.13261	25162	0.81	2.37	2.9	4.6	0.6	4.9	1.6	4.9	1.6	3.4

Table 7

Hs.88663	796623	0.87	2.93	3.4	2.4	2.5	4.1	4.4	4.4	1.9	3.2
Hs.9659	824419	0.81	2.06	2.5	1	4.5	1.2	3.5	4.5	3	3.4
Hs.40421	273394	0.9	2.4	2.7	2.1	1.2	3.3	4	4	2.8	3.4
Hs.90303	190491	0.94	2.42	2.6	3.7	1.1	3.8	1.7	3.8	1.3	3.3
Hs.78853	49464	0.39	1.36	3.5	2.7	1.2	6.9	3.3	6.9	1.2	9.2
Hs.161585	357364	0.44	2.37	5.4	4.9	2.9	5.7	8.1	8.1	2	4.3
Hs.21879	201168	1	2.61	2.6	3.1	2.2	3.4	1.6	3.4	0.8	3
Hs.65370	1069733	0.19	1.82	9.6	17.6	17.6	1.3	1.7	17.6	1.8	3.6
Hs.69563	204214	0.54	2.07	3.8	3.3	1.8	6.2	4	6.2	3.8	5.7
Hs.2430	757165	0.1	1.34	13.4	0.2	0.7	25.8	26.8	26.8	22.1	32.4
Hs.159142	40887	0.54	1.97	3.7	5.3	1.9	6	1.5	6	1.3	3.2
Hs.17184	343974	0.53	1.62	3	5.9	0.7	3.7	1.8	5.9	3.1	1.5
Hs.145698	280249	0.19	1.83	9.5	15.8	2.1	11	9	15.8	2.4	5
Hs.77793	526282	0.43	1.4	3.3	6.8	0.9	3.8	1.6	6.8	1.9	6.6
Hs.76394	745542	0.46	1.81	3.9	5.9	2.7	4.4	2.6	5.9	3.5	3.8
Hs.79299	1469377	0.41	1.91	4.7	2.9	6.1	3.4	6.4	6.4	1.2	3
Hs.101047	366893	0.33	1.08	3.3	4.8	0.7	6.2	1.5	6.2	2	7.1
Hs.28974	784190	0.28	1.22	4.4	8	1	6.2	2.3	8	3.7	5.9
Hs.153667	1476053	0.36	1.5	4.2	2	6	3.8	5	6	2.1	6.2
Hs.194794	769751	0.29	1.54	5.3	4.3	2.8	6.6	7.3	7.3	1.9	3.4
Hs.30941	196348	0.35	1.04	3	5.9	0.7	3.9	1.5	5.9	1.7	5.8
Hs.32425	824886	0.39	1.25	3.2	4.7	1.8	4.2	2.2	4.7	1.3	3
Hs.172803	68988	0.17	0.85	5.1	10.3	1.2	6.5	2.4	10.3	1.4	6.3
Hs.94970	26507	0.29	0.86	3	4.2	0.9	3.8	3.1	4.2	1.7	5.4
Hs.69749	361996	0.34	1.01	3	4	1.2	4.6	2.2	4.6	0.7	4.1
Hs.218619	219676	0.1	0.5	5	14.9	0.7	3.4	1	14.9	2.5	3.8
Hs.151738	22040	0.3	0.76	2.5	4.6	0.8	3.2	1.5	4.6	1.7	3.3
Hs.203881	261522	0.2	0.79	4	5.5	2.1	6	2.4	6	1.3	3.1
Hs.34665	782277	0.29	0.61	2.1	1.2	3.1	0.8	3.2	3.2	2.6	3.9
Hs.143434	24884	0.14	0.49	3.4	4.5	0.7	7.2	1.3	7.2	1	4
Hs.216674	51041	0.18	0.53	2.9	2.1	1.7	3.1	5	5	1.1	3.2
Hs.214433	811770	0.21	0.61	2.9	3.6	1.3	4.3	2.5	4.3	1.2	4.1
Hs.9452	502464	0.19	0.61	3.3	4.1	1.5	3.7	3.7	4.1	3.4	2.3
Hs.19699	773217	0.15	0.42	2.7	2.4	1	4.3	3	4.3	0.9	3.6
Hs.83081	525799	0.16	0.44	2.8	1.6	2.5	3.9	3	3.9	3	4

Table 7

Hs.111894	882511	0.1	0.39	3.9	4.9	1.2	6.1	3.5	6.1	0.5	3
Hs.6111	363590	0.11	0.36	3.4	5.4	2.1	3.5	2.6	5.4	2.2	3.7
Hs.6259	767059	0.1	0.3	3	5.8	1.6	3.7	0.9	5.8	0.5	3
Hs.161833	752704	0.1	0.24	2.4	2	1.4	3.1	3.1	3.1	0.5	4.2

TABLE 8A

Sequence #	Accession #
Sequence 1	AA000998
Sequence 2	AA001567
Sequence 3	AA004632
Sequence 4	AA005124
Sequence 5	AA007581
Sequence 6	AA007588
Sequence 7	AA007606
Sequence 8	AA009433
Sequence 9	AA009455
Sequence 10	AA010305
Sequence 11	AA010715
Sequence 12	AA010760
Sequence 13	AA010954
Sequence 14	AA011228
Sequence 15	AA011259
Sequence 16	AA011307
Sequence 17	AA011427
Sequence 18	AA011607
Sequence 19	AA013198
Sequence 20	AA013357
Sequence 21	AA020855
Sequence 22	AA020878
Sequence 23	AA020911
Sequence 24	AA021013
Sequence 25	AA021181
Sequence 26	AA021194
Sequence 27	AA022480
Sequence 28	AA022788
Sequence 29	AA022838
Sequence 30	AA022937
Sequence 31	AA024401
Sequence 32	AA024799
Sequence 33	AA024968
Sequence 34	AA025057
Sequence 35	AA025291
Sequence 36	AA025432
Sequence 37	AA025715
Sequence 38	AA026215
Sequence 39	AA027098
Sequence 40	AA027233
Sequence 41	AA027264
Sequence 42	AA028145
Sequence 43	AA029146
Sequence 44	AA029522
Sequence 45	AA029676
Sequence 46	AA030055
Sequence 47	AA031575
Sequence 48	AA031602
Sequence 49	AA031745
Sequence 50	AA031764
Sequence 51	AA032023
Sequence 52	AA033590
Sequence 53	AA035208
Sequence 54	AA036683
Sequence 55	AA037138
Sequence 56	AA037145
Sequence 57	AA037170
Sequence 58	AA037172
Sequence 59	AA037208
Sequence 60	AA037254
Sequence 61	AA037284
Sequence 62	AA037290
Sequence 63	AA037359
Sequence 64	AA037518
Sequence 65	AA037788
Sequence 66	AA039354
Sequence 67	AA039762
Sequence 68	AA040242
Sequence 69	AA040344
Sequence 70	AA041241
Sequence 71	AA041520
Sequence 72	AA042864
Sequence 73	AA043951
Sequence 74	AA044004
Sequence 75	AA044118
Sequence 76	AA044885
Sequence 77	AA044888
Sequence 78	AA045196
Sequence 79	AA045214
Sequence 80	AA045393
Sequence 81	AA045606
Sequence 82	AA045993
Sequence 83	AA046360
Sequence 84	AA046582
Sequence 85	AA046628
Sequence 86	AA046785
Sequence 87	AA047099
Sequence 88	AA047134
Sequence 89	AA047606
Sequence 90	AA053071
Sequence 91	AA053265
Sequence 92	AA053860
Sequence 93	AA053909
Sequence 94	AA054169
Sequence 95	AA054277
Sequence 96	AA054341
Sequence 97	AA054602
Sequence 98	AA054771
Sequence 99	AA055326
Sequence 100	AA055637
Sequence 101	AA056334
Sequence 102	AA056453

TABLE 8A

Sequence 103	AA057153
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Sequence 105	AA058708
Sequence 106	AA058899
Sequence 107	AA062957
Sequence 108	AA063467
Sequence 109	AA069135
Sequence 110	AA071255
Sequence 111	AA071501
Sequence 112	AA074241
Sequence 113	AA074650
Sequence 114	AA075029
Sequence 115	AA075184
Sequence 116	AA075422
Sequence 117	AA075531
Sequence 118	AA075632
Sequence 119	AA075635
Sequence 120	AA075682
Sequence 121	AA075781
Sequence 122	AA076135
Sequence 123	AA076191
Sequence 124	AA076461
Sequence 125	AA080889
Sequence 126	AA081043
Sequence 127	AA081068
Sequence 128	AA081149
Sequence 129	AA081223
Sequence 130	AA081355
Sequence 131	AA081600
Sequence 132	AA081711
Sequence 133	AA081795
Sequence 134	AA081817
Sequence 135	AA082142
Sequence 136	AA082241
Sequence 137	AA082314
Sequence 138	AA082523
Sequence 139	AA082572
Sequence 140	AA082747
Sequence 141	AA083345
Sequence 142	AA083645
Sequence 143	AA083740
Sequence 144	AA084560
Sequence 145	AA084984
Sequence 146	AA085104
Sequence 147	AA085435
Sequence 148	AA085512
Sequence 149	AA085538
Sequence 150	AA085824
Sequence 151	AA085872
Sequence 152	AA086333
Sequence 153	AA088197
Sequence 154	AA088544
Sequence 155	AA088655
Sequence 156	AA088740
Sequence 157	AA088779
Sequence 158	AA088783
Sequence 159	AA089897
Sequence 160	AA089985
Sequence 161	AA090106
Sequence 162	AA090243
Sequence 163	AA090264
Sequence 164	AA091050
Sequence 165	AA091398
Sequence 166	AA091496
Sequence 167	AA091555
Sequence 168	AA091771
Sequence 169	AA092002
Sequence 170	AA092185
Sequence 171	AA093842
Sequence 172	AA094496
Sequence 173	AA095065
Sequence 174	AA095443
Sequence 175	AA095962
Sequence 176	AA098929
Sequence 177	AA099083
Sequence 178	AA099631
Sequence 179	AA100168
Sequence 180	AA100340
Sequence 181	AA100440
Sequence 182	AA100531
Sequence 183	AA100671
Sequence 184	AA100738
Sequence 185	AA100799
Sequence 186	AA100852
Sequence 187	AA101243
Sequence 188	AA101296
Sequence 189	AA101561
Sequence 190	AA101562
Sequence 191	AA101964
Sequence 192	AA102670
Sequence 193	AA102738
Sequence 194	AA111855
Sequence 195	AA111856
Sequence 196	AA112288
Sequence 197	AA112748
Sequence 198	AA112936
Sequence 199	AA113788
Sequence 200	AA114086
Sequence 201	AA114879
Sequence 202	AA115399
Sequence 203	AA115592
Sequence 204	AA115716
Sequence 205	AA115838
Sequence 206	AA115983

TABLE 8A

Sequence 207	AA116004
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Sequence 209	AA120962
Sequence 210	AA121249
Sequence 211	AA121581
Sequence 212	AA121743
Sequence 213	AA122237
Sequence 214	AA122401
Sequence 215	AA125790
Sequence 216	AA125927
Sequence 217	AA125988
Sequence 218	AA126493
Sequence 219	AA126817
Sequence 220	AA127075
Sequence 221	AA127783
Sequence 222	AA127962
Sequence 223	AA128508
Sequence 224	AA128518
Sequence 225	AA128743
Sequence 226	AA128984
Sequence 227	AA129223
Sequence 228	AA129310
Sequence 229	AA129312
Sequence 230	AA129783
Sequence 231	AA130028
Sequence 232	AA130141
Sequence 233	AA130221
Sequence 234	AA130262
Sequence 235	AA130347
Sequence 236	AA130522
Sequence 237	AA130626
Sequence 238	AA130827
Sequence 239	AA131231
Sequence 240	AA132250
Sequence 241	AA132580
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Sequence 243	AA132889
Sequence 244	AA132987
Sequence 245	AA133277
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Sequence 247	AA133692
Sequence 248	AA133796
Sequence 249	AA134919
Sequence 250	AA135504
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Sequence 252	AA136442
Sequence 253	AA136447
Sequence 254	AA136750
Sequence 255	AA136756
Sequence 256	AA136796
Sequence 257	AA142842
Sequence 258	AA142865
Sequence 259	AA142952
Sequence 260	AA143286
Sequence 261	AA143471
Sequence 262	AA147523
Sequence 263	AA147833
Sequence 264	AA148508
Sequence 265	AA148915
Sequence 266	AA149065
Sequence 267	AA149082
Sequence 268	AA149309
Sequence 269	AA149360
Sequence 270	AA149415
Sequence 271	AA149842
Sequence 272	AA149968
Sequence 273	AA150662
Sequence 274	AA152165
Sequence 275	AA152204
Sequence 276	AA152258
Sequence 277	AA155913
Sequence 278	AA156356
Sequence 279	AA156782
Sequence 280	AA156784
Sequence 281	AA156901
Sequence 282	AA157089
Sequence 283	AA157266
Sequence 284	AA157632
Sequence 285	AA157889
Sequence 286	AA158217
Sequence 287	AA159015
Sequence 288	AA159259
Sequence 289	AA159272
Sequence 290	AA159654
Sequence 291	AA159826
Sequence 292	AA164582
Sequence 293	AA165051
Sequence 294	AA166739
Sequence 295	AA167654
Sequence 296	AA167814
Sequence 297	AA167817
Sequence 298	AA169340
Sequence 299	AA169392
Sequence 300	AA169487
Sequence 301	AA169564
Sequence 302	AA171510
Sequence 303	AA173042
Sequence 304	AA173184
Sequence 305	AA173381
Sequence 306	AA173657
Sequence 307	AA173910
Sequence 308	AA173948
Sequence 309	AA174102
Sequence 310	AA179554

TABLE 8A

Sequence 311	AA180262
Sequence 312	AA181201
Sequence 313	AA181413
Sequence 314	AA181455
Sequence 315	AA181580
Sequence 316	AA186399
Sequence 317	AA186406
Sequence 318	AA186477
Sequence 319	AA186485
Sequence 320	AA186939
Sequence 321	AA187030
Sequence 322	AA187073
Sequence 323	AA187379
Sequence 324	AA187405
Sequence 325	AA187428
Sequence 326	AA187505
Sequence 327	AA187610
Sequence 328	AA187719
Sequence 329	AA187875
Sequence 330	AA188063
Sequence 331	AA188162
Sequence 332	AA188203
Sequence 333	AA188527
Sequence 334	AA188591
Sequence 335	AA188921
Sequence 336	AA189000
Sequence 337	AA190587
Sequence 338	AA191071
Sequence 339	AA191422
Sequence 340	AA191476
Sequence 341	AA191516
Sequence 342	AA192816
Sequence 343	AA193156
Sequence 344	AA193340
Sequence 345	AA193351
Sequence 346	AA194517
Sequence 347	AA194876
Sequence 348	AA194894
Sequence 349	AA195470
Sequence 350	AA195696
Sequence 351	AA195946
Sequence 352	AA195956
Sequence 353	AA196003
Sequence 354	AA196633
Sequence 355	AA196962
Sequence 356	AA199836
Sequence 357	AA199891
Sequence 358	AA203134
Sequence 359	AA203379
Sequence 360	AA203561
Sequence 361	AA205253
Sequence 362	AA205539
Sequence 363	AA205565
Sequence 364	AA205854
Sequence 365	AA205860
Sequence 366	AA206220
Sequence 367	AA206277
Sequence 368	AA206527
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Sequence 370	AA206848
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Sequence 372	AA207014
Sequence 373	AA207131
Sequence 374	AA207185
Sequence 375	AA207267
Sequence 376	AA209524
Sequence 377	AA209531
Sequence 378	AA210760
Sequence 379	AA211509
Sequence 380	AA211703
Sequence 381	AA213429
Sequence 382	AA214548
Sequence 383	AA215724
Sequence 384	AA216192
Sequence 385	AA216202
Sequence 386	AA216670
Sequence 387	AA218820
Sequence 388	AA220979
Sequence 389	AA221029
Sequence 390	AA223779
Sequence 391	AA223828
Sequence 392	AA224124
Sequence 393	AA224269
Sequence 394	AA225256
Sequence 395	AA225348
Sequence 396	AA225436
Sequence 397	AA225515
Sequence 398	AA225528
Sequence 399	AA225601
Sequence 400	AA225644
Sequence 401	AA226337
Sequence 402	AA226380
Sequence 403	AA226546
Sequence 404	AA226672
Sequence 405	AA226732
Sequence 406	AA227366
Sequence 407	AA227579
Sequence 408	AA228284
Sequence 409	AA228389
Sequence 410	AA228697
Sequence 411	AA228935
Sequence 412	AA229047
Sequence 413	AA229087
Sequence 414	AA229419

TABLE 8A

Sequence 415	AA229467
Sequence 416	AA229611
Sequence 417	AA229619
Sequence 418	AA229777
Sequence 419	AA229951
Sequence 420	AA230173
Sequence 421	AA232172
Sequence 422	AA232345
Sequence 423	AA232379
Sequence 424	AA232626
Sequence 425	AA232691
Sequence 426	AA232710
Sequence 427	AA233959
Sequence 428	AA234138
Sequence 429	AA234732
Sequence 430	AA234933
Sequence 431	AA235007
Sequence 432	AA235430
Sequence 433	AA235805
Sequence 434	AA236444
Sequence 435	AA242913
Sequence 436	AA243241
Sequence 437	AA243346
Sequence 438	AA243499
Sequence 439	AA243799
Sequence 440	AA243990
Sequence 441	AA244162
Sequence 442	AA244240
Sequence 443	AA244377
Sequence 444	AA248319
Sequence 445	AA248658
Sequence 446	AA248706
Sequence 447	AA248791
Sequence 448	AA249154
Sequence 449	AA249195
Sequence 450	AA249421
Sequence 451	AA251178
Sequence 452	AA251182
Sequence 453	AA251303
Sequence 454	AA251305
Sequence 455	AA253098
Sequence 456	AA253340
Sequence 457	AA255740
Sequence 458	AA256108
Sequence 459	AA256330
Sequence 460	AA256335
Sequence 461	AA256863
Sequence 462	AA257992
Sequence 463	AA258725
Sequence 464	AA259207
Sequence 465	AA261831
Sequence 466	AA261990

Sequence 467	AA262168
Sequence 468	AA262799
Sequence 469	AA278536
Sequence 470	AA278550
Sequence 471	AA278660
Sequence 472	AA278789
Sequence 473	AA279466
Sequence 474	AA281412
Sequence 475	AA281626
Sequence 476	AA283950
Sequence 477	AA284334
Sequence 478	AA284551
Sequence 479	AA284584
Sequence 480	AA284668
Sequence 481	AA284866
Sequence 482	AA284934
Sequence 483	AA284955
Sequence 484	AA284982
Sequence 485	AA285095
Sequence 486	AA287184
Sequence 487	AA290630
Sequence 488	AA291144
Sequence 489	AA291183
Sequence 490	AA291227
Sequence 491	AA291407
Sequence 492	AA291690
Sequence 493	AA292047
Sequence 494	AA292191
Sequence 495	AA292823
Sequence 496	AA292993
Sequence 497	AA293286
Sequence 498	AA295093
Sequence 499	AA295311
Sequence 500	AA295396
Sequence 501	AA295786
Sequence 502	AA295797
Sequence 503	AA295804
Sequence 504	AA295941
Sequence 505	AA295996
Sequence 506	AA296074
Sequence 507	AA296582
Sequence 508	AA296640
Sequence 509	AA296775
Sequence 510	AA296846
Sequence 511	AA296871
Sequence 512	AA296929
Sequence 513	AA297323
Sequence 514	AA297327
Sequence 515	AA297328
Sequence 516	AA297432
Sequence 517	AA297883
Sequence 518	AA297886

TABLE 8A

Sequence 519	AA298050
Sequence 520	AA298085
Sequence 521	AA298282
Sequence 522	AA298447
Sequence 523	AA298576
Sequence 524	AA298593
Sequence 525	AA298648
Sequence 526	AA298773
Sequence 527	AA299067
Sequence 528	AA300065
Sequence 529	AA300491
Sequence 530	AA300651
Sequence 531	AA300711
Sequence 532	AA300732
Sequence 533	AA300994
Sequence 534	AA301062
Sequence 535	AA301343
Sequence 536	AA301676
Sequence 537	AA301789
Sequence 538	AA301863
Sequence 539	AA301864
Sequence 540	AA301910
Sequence 541	AA302028
Sequence 542	AA302457
Sequence 543	AA302473
Sequence 544	AA302919
Sequence 545	AA303085
Sequence 546	AA303709
Sequence 547	AA303796
Sequence 548	AA303950
Sequence 549	AA304028
Sequence 550	AA304043
Sequence 551	AA304730
Sequence 552	AA304935
Sequence 553	AA304961
Sequence 554	AA305331
Sequence 555	AA305417
Sequence 556	AA305494
Sequence 557	AA305997
Sequence 558	AA306079
Sequence 559	AA306146
Sequence 560	AA306232
Sequence 561	AA306486
Sequence 562	AA306488
Sequence 563	AA306620
Sequence 564	AA306734
Sequence 565	AA306863
Sequence 566	AA306883
Sequence 567	AA306887
Sequence 568	AA307070
Sequence 569	AA307700
Sequence 570	AA307818
Sequence 571	AA307875
Sequence 572	AA308049
Sequence 573	AA308215
Sequence 574	AA308274
Sequence 575	AA309002
Sequence 576	AA309928
Sequence 577	AA309929
Sequence 578	AA310030
Sequence 579	AA310320
Sequence 580	AA311023
Sequence 581	AA311139
Sequence 582	AA311227
Sequence 583	AA311701
Sequence 584	AA311869
Sequence 585	AA311896
Sequence 586	AA311905
Sequence 587	AA312513
Sequence 588	AA312550
Sequence 589	AA312574
Sequence 590	AA313048
Sequence 591	AA313131
Sequence 592	AA313277
Sequence 593	AA313552
Sequence 594	AA313603
Sequence 595	AA313607
Sequence 596	AA313668
Sequence 597	AA313775
Sequence 598	AA313794
Sequence 599	AA314119
Sequence 600	AA314286
Sequence 601	AA314378
Sequence 602	AA314654
Sequence 603	AA314659
Sequence 604	AA314674
Sequence 605	AA314920
Sequence 606	AA315072
Sequence 607	AA315426
Sequence 608	AA315627
Sequence 609	AA316016
Sequence 610	AA316055
Sequence 611	AA316071
Sequence 612	AA316153
Sequence 613	AA316502
Sequence 614	AA317092
Sequence 615	AA317329
Sequence 616	AA317411
Sequence 617	AA317477
Sequence 618	AA317551
Sequence 619	AA317976
Sequence 620	AA318377
Sequence 621	AA318591
Sequence 622	AA318628

TABLE 8A

Sequence 623	AA318662
Sequence 624	AA318737
Sequence 625	AA319664
Sequence 626	AA319726
Sequence 627	AA319798
Sequence 628	AA321244
Sequence 629	AA322115
Sequence 630	AA322537
Sequence 631	AA322966
Sequence 632	AA326982
Sequence 633	AA327247
Sequence 634	AA327455
Sequence 635	AA327592
Sequence 636	AA328185
Sequence 637	AA328352
Sequence 638	AA328443
Sequence 639	AA329529
Sequence 640	AA329927
Sequence 641	AA332143
Sequence 642	AA332250
Sequence 643	AA332410
Sequence 644	AA332470
Sequence 645	AA332672
Sequence 646	AA332772
Sequence 647	AA333358
Sequence 648	AA333390
Sequence 649	AA333694
Sequence 650	AA333796
Sequence 651	AA334592
Sequence 652	AA334656
Sequence 653	AA335086
Sequence 654	AA335356
Sequence 655	AA335527
Sequence 656	AA335862
Sequence 657	AA336273
Sequence 658	AA336690
Sequence 659	AA336815
Sequence 660	AA337085
Sequence 661	AA337617
Sequence 662	AA338761
Sequence 663	AA340767
Sequence 664	AA340989
Sequence 665	AA341183
Sequence 666	AA341693
Sequence 667	AA343612
Sequence 668	AA344287
Sequence 669	AA344350
Sequence 670	AA345486
Sequence 671	AA345528
Sequence 672	AA345757
Sequence 673	AA346556
Sequence 674	AA347236

Sequence 675	AA348472
Sequence 676	AA348482
Sequence 677	AA348945
Sequence 678	AA348987
Sequence 679	AA349571
Sequence 680	AA349781
Sequence 681	AA350719
Sequence 682	AA351686
Sequence 683	AA352116
Sequence 684	AA352567
Sequence 685	AA352888
Sequence 686	AA353039
Sequence 687	AA354391
Sequence 688	AA355584
Sequence 689	AA355867
Sequence 690	AA356575
Sequence 691	AA356815
Sequence 692	AA357031
Sequence 693	AA357538
Sequence 694	AA357671
Sequence 695	AA358176
Sequence 696	AA359492
Sequence 697	AA360254
Sequence 698	AA360441
Sequence 699	AA360514
Sequence 700	AA360607
Sequence 701	AA360704
Sequence 702	AA360936
Sequence 703	AA361063
Sequence 704	AA362771
Sequence 705	AA363047
Sequence 706	AA363581
Sequence 707	AA364646
Sequence 708	AA364833
Sequence 709	AA367685
Sequence 710	AA368546
Sequence 711	AA369836
Sequence 712	AA370644
Sequence 713	AA372230
Sequence 714	AA372927
Sequence 715	AA373141
Sequence 716	AA374161
Sequence 717	AA374198
Sequence 718	AA374233
Sequence 719	AA374376
Sequence 720	AA375184
Sequence 721	AA375478
Sequence 722	AA375594
Sequence 723	AA375717
Sequence 724	AA375815
Sequence 725	AA375867
Sequence 726	AA375933

TABLE 8A

Sequence 727	AA376034
Sequence 728	AA376143
Sequence 729	AA376424
Sequence 730	AA376837
Sequence 731	AA377265
Sequence 732	AA377319
Sequence 733	AA377431
Sequence 734	AA378617
Sequence 735	AA379901
Sequence 736	AA380293
Sequence 737	AA380819
Sequence 738	AA380936
Sequence 739	AA381196
Sequence 740	AA382938
Sequence 741	AA383074
Sequence 742	AA384095
Sequence 743	AA384518
Sequence 744	AA384671
Sequence 745	AA386075
Sequence 746	AA393869
Sequence 747	AA393892
Sequence 748	AA398581
Sequence 749	AA398854
Sequence 750	AA399326
Sequence 751	AA400391
Sequence 752	AA401257
Sequence 753	AA402298
Sequence 754	AA402724
Sequence 755	AA402796
Sequence 756	AA403048
Sequence 757	AA404225
Sequence 758	AA404288
Sequence 759	AA404346
Sequence 760	AA404646
Sequence 761	AA404656
Sequence 762	AA405208
Sequence 763	AA405415
Sequence 764	AA405443
Sequence 765	AA405869
Sequence 766	AA406192
Sequence 767	AA406575
Sequence 768	AA410293
Sequence 769	AA410496
Sequence 770	AA410567
Sequence 771	AA411234
Sequence 772	AA411452
Sequence 773	AA412193
Sequence 774	AA416736
Sequence 775	AA417097
Sequence 776	AA418304
Sequence 777	AA418322
Sequence 778	AA419582
Sequence 779	AA420462
Sequence 780	AA420491
Sequence 781	AA420625
Sequence 782	AA420758
Sequence 783	AA421213
Sequence 784	AA421595
Sequence 785	AA421682
Sequence 786	AA421850
Sequence 787	AA422057
Sequence 788	AA424767
Sequence 789	AA424796
Sequence 790	AA425236
Sequence 791	AA425400
Sequence 792	AA425562
Sequence 793	AA426216
Sequence 794	AA426495
Sequence 795	AA426499
Sequence 796	AA429945
Sequence 797	AA429980
Sequence 798	AA433968
Sequence 799	AA435877
Sequence 800	AA436611
Sequence 801	AA436738
Sequence 802	AA442174
Sequence 803	AA442936
Sequence 804	AA443429
Sequence 805	AA443690
Sequence 806	AA444386
Sequence 807	AA446505
Sequence 808	AA446675
Sequence 809	AA446716
Sequence 810	AA447232
Sequence 811	AA447896
Sequence 812	AA447948
Sequence 813	AA448074
Sequence 814	AA448526
Sequence 815	AA448646
Sequence 816	AA448664
Sequence 817	AA449008
Sequence 818	AA449054
Sequence 819	AA449067
Sequence 820	AA449394
Sequence 821	AA449530
Sequence 822	AA449593
Sequence 823	AA449862
Sequence 824	AA451633
Sequence 825	AA452193
Sequence 826	AA452968
Sequence 827	AA453027
Sequence 828	AA453359
Sequence 829	AA453478
Sequence 830	AA454820

TABLE 8A

Sequence 831	AA454921
Sequence 832	AA454932
Sequence 833	AA455644
Sequence 834	AA455944
Sequence 835	AA456321
Sequence 836	AA456454
Sequence 837	AA456510
Sequence 838	AA456778
Sequence 839	AA457247
Sequence 840	AA459292
Sequence 841	AA460078
Sequence 842	AA460514
Sequence 843	AA460651
Sequence 844	AA460805
Sequence 845	AA460946
Sequence 846	AA461254
Sequence 847	AA463661
Sequence 848	AA463964
Sequence 849	AA464689
Sequence 850	AA465049
Sequence 851	AA465256
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Sequence 855	AA469207
Sequence 856	AA471017
Sequence 857	AA471246
Sequence 858	AA476585
Sequence 859	AA477044
Sequence 860	AA477065
Sequence 861	AA477628
Sequence 862	AA478258
Sequence 863	AA478645
Sequence 864	AA478719
Sequence 865	AA478982
Sequence 866	AA479646
Sequence 867	AA479857
Sequence 868	AA480529
Sequence 869	AA480830
Sequence 870	AA480844
Sequence 871	AA481058
Sequence 872	AA481283
Sequence 873	AA481927
Sequence 874	AA482741
Sequence 875	AA482855
Sequence 876	AA483460
Sequence 877	AA484409
Sequence 878	AA485310
Sequence 879	AA485467
Sequence 880	AA485495
Sequence 881	AA485648
Sequence 882	AA485853
Sequence 883	AA486230
Sequence 884	AA486283
Sequence 885	AA486375
Sequence 886	AA486379
Sequence 887	AA486731
Sequence 888	AA487202
Sequence 889	AA487483
Sequence 890	AA488517
Sequence 891	AA488735
Sequence 892	AA488765
Sequence 893	AA490635
Sequence 894	AA490989
Sequence 895	AA492143
Sequence 896	AA492272
Sequence 897	AA493138
Sequence 898	AA493532
Sequence 899	AA494295
Sequence 900	AA496105
Sequence 901	AA496329
Sequence 902	AA496373
Sequence 903	AA496650
Sequence 904	AA496664
Sequence 905	AA502292
Sequence 906	AA502836
Sequence 907	AA503078
Sequence 908	AA503208
Sequence 909	AA503607
Sequence 910	AA503870
Sequence 911	AA504095
Sequence 912	AA504283
Sequence 913	AA504798
Sequence 914	AA505615
Sequence 915	AA505632
Sequence 916	AA507382
Sequence 917	AA507394
Sequence 918	AA507405
Sequence 919	AA507626
Sequence 920	AA507911
Sequence 921	AA508736
Sequence 922	AA512975
Sequence 923	AA513783
Sequence 924	AA513848
Sequence 925	AA513869
Sequence 926	AA515132
Sequence 927	AA521093
Sequence 928	AA521348
Sequence 929	AA522693
Sequence 930	AA523094
Sequence 931	AA523399
Sequence 932	AA524064
Sequence 933	AA524726
Sequence 934	AA525031

TABLE 8A

Sequence 935	AA525960
Sequence 936	AA526745
Sequence 937	AA527072
Sequence 938	AA527216
Sequence 939	AA527293
Sequence 940	AA528173
Sequence 941	AA532501
Sequence 942	AA532734
Sequence 943	AA532956
Sequence 944	AA533037
Sequence 945	AA533146
Sequence 946	AA533283
Sequence 947	AA533770
Sequence 948	AA534231
Sequence 949	AA534645
Sequence 950	AA534826
Sequence 951	AA534842
Sequence 952	AA535621
Sequence 953	AA536175
Sequence 954	AA545745
Sequence 955	AA545771
Sequence 956	AA548870
Sequence 957	AA548889
Sequence 958	AA551344
Sequence 959	AA551391
Sequence 960	AA552077
Sequence 961	AA552449
Sequence 962	AA553751
Sequence 963	AA554373
Sequence 964	AA554506
Sequence 965	AA554630
Sequence 966	AA554914
Sequence 967	AA557264
Sequence 968	AA557575
Sequence 969	AA558585
Sequence 970	AA558670
Sequence 971	AA564555
Sequence 972	AA564604
Sequence 973	AA565099
Sequence 974	AA565334
Sequence 975	AA565499
Sequence 976	AA568922
Sequence 977	AA573737
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Sequence 979	AA576764
Sequence 980	AA577071
Sequence 981	AA577613
Sequence 982	AA581035
Sequence 983	AA581425
Sequence 984	AA582006
Sequence 985	AA582588
Sequence 986	AA582853
Sequence 987	AA582855
Sequence 988	AA584921
Sequence 989	AA585327
Sequence 990	AA585440
Sequence 991	AA586687
Sequence 992	AA587379
Sequence 993	AA587754
Sequence 994	AA588189
Sequence 995	AA588729
Sequence 996	AA593834
Sequence 997	AA593864
Sequence 998	AA595238
Sequence 999	AA595471
Sequence 1000	AA595937
Sequence 1001	AA598918
Sequence 1002	AA599251
Sequence 1003	AA599495
Sequence 1004	AA599768
Sequence 1005	AA599857
Sequence 1006	AA600853
Sequence 1007	AA601946
Sequence 1008	AA601970
Sequence 1009	AA602217
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Sequence 1012	AA612632
Sequence 1013	AA612919
Sequence 1014	AA613803
Sequence 1015	AA613834
Sequence 1016	AA613908
Sequence 1017	AA614529
Sequence 1018	AA614729
Sequence 1019	AA617655
Sequence 1020	AA618477
Sequence 1021	AA618549
Sequence 1022	AA622011
Sequence 1023	AA625387
Sequence 1024	AA625487
Sequence 1025	AA626507
Sequence 1026	AA627554
Sequence 1027	AA627916
Sequence 1028	AA631152
Sequence 1029	AA633433
Sequence 1030	AA633556
Sequence 1031	AA633901
Sequence 1032	AA633954
Sequence 1033	AA634175
Sequence 1034	AA634876
Sequence 1035	AA640687
Sequence 1036	AA640827
Sequence 1037	AA641959
Sequence 1038	AA643026

TABLE 8A

Sequence 1039	AA643416
Sequence 1040	AA643835
Sequence 1041	AA643953
Sequence 1042	AA648474
Sequence 1043	AA648790
Sequence 1044	AA653775
Sequence 1045	AA654660
Sequence 1046	AA654827
Sequence 1047	AA654953
Sequence 1048	AA654959
Sequence 1049	AA658330
Sequence 1050	AA658374
Sequence 1051	AA658821
Sequence 1052	AA659162
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Sequence 1054	AA663188
Sequence 1055	AA668928
Sequence 1056	AA669832
Sequence 1057	AA669952
Sequence 1058	AA677870
Sequence 1059	AA678176
Sequence 1060	AA678829
Sequence 1061	AA679602
Sequence 1062	AA679801
Sequence 1063	AA680052
Sequence 1064	AA682244
Sequence 1065	AA682910
Sequence 1066	AA683117
Sequence 1067	AA687426
Sequence 1068	AA700838
Sequence 1069	AA700859
Sequence 1070	AA702567
Sequence 1071	AA703779
Sequence 1072	AA706344
Sequence 1073	AA706577
Sequence 1074	AA707633
Sequence 1075	AA708317
Sequence 1076	AA709124
Sequence 1077	AA709305
Sequence 1078	AA716710
Sequence 1079	AA719354
Sequence 1080	AA719764
Sequence 1081	AA719844
Sequence 1082	AA719940
Sequence 1083	AA721611
Sequence 1084	AA724380
Sequence 1085	AA729088
Sequence 1086	AA730776
Sequence 1087	AA731867
Sequence 1088	AA732587
Sequence 1089	AA732811
Sequence 1090	AA732812
Sequence 1091	AA737128
Sequence 1092	AA738004
Sequence 1093	AA738240
Sequence 1094	AA740727
Sequence 1095	AA740952
Sequence 1096	AA741408
Sequence 1097	AA743800
Sequence 1098	AA747442
Sequence 1099	AA748435
Sequence 1100	AA757674
Sequence 1101	AA758349
Sequence 1102	AA764736
Sequence 1103	AA765775
Sequence 1104	AA767648
Sequence 1105	AA767779
Sequence 1106	AA768667
Sequence 1107	AA768847
Sequence 1108	AA769168
Sequence 1109	AA769195
Sequence 1110	AA769595
Sequence 1111	AA770613
Sequence 1112	AA773083
Sequence 1113	AA773335
Sequence 1114	AA773398
Sequence 1115	AA773856
Sequence 1116	AA774247
Sequence 1117	AA774843
Sequence 1118	AA774876
Sequence 1119	AA775030
Sequence 1120	AA775397
Sequence 1121	AA775721
Sequence 1122	AA775831
Sequence 1123	AA775839
Sequence 1124	AA775987
Sequence 1125	AA777014
Sequence 1126	AA777102
Sequence 1127	AA777477
Sequence 1128	AA778561
Sequence 1129	AA779949
Sequence 1130	AA781074
Sequence 1131	AA781207
Sequence 1132	AA782679
Sequence 1133	AA804750
Sequence 1134	AA806060
Sequence 1135	AA806294
Sequence 1136	AA807586
Sequence 1137	AA808946
Sequence 1138	AA809199
Sequence 1139	AA809396
Sequence 1140	AA810675
Sequence 1141	AA812236
Sequence 1142	AA814719

TABLE 8A

Sequence 1143	AA825931
Sequence 1144	AA826294
Sequence 1145	AA827350
Sequence 1146	AA831659
Sequence 1147	AA833773
Sequence 1148	AA834301
Sequence 1149	AA835460
Sequence 1150	AA835885
Sequence 1151	AA837819
Sequence 1152	AA838670
Sequence 1153	AA843176
Sequence 1154	AA843404
Sequence 1155	AA843407
Sequence 1156	AA846308
Sequence 1157	AA846523
Sequence 1158	AA846735
Sequence 1159	AA846794
Sequence 1160	AA847557
Sequence 1161	AA852328
Sequence 1162	AA852527
Sequence 1163	AA857478
Sequence 1164	AA857735
Sequence 1165	AA861590
Sequence 1166	AA861631
Sequence 1167	AA865437
Sequence 1168	AA865450
Sequence 1169	AA872336
Sequence 1170	AA872817
Sequence 1171	AA877479
Sequence 1172	AA878933
Sequence 1173	AA884545
Sequence 1174	AA886322
Sequence 1175	AA887673
Sequence 1176	AA887751
Sequence 1177	AA894627
Sequence 1178	AA902264
Sequence 1179	AA903708
Sequence 1180	AA904239
Sequence 1181	AA904362
Sequence 1182	AA905314
Sequence 1183	AA905491
Sequence 1184	AA907403
Sequence 1185	AA908982
Sequence 1186	AA909144
Sequence 1187	AA910100
Sequence 1188	AA912466
Sequence 1189	AA912796
Sequence 1190	AA917350
Sequence 1191	AA918023
Sequence 1192	AA919102
Sequence 1193	AA921913
Sequence 1194	AA922029
Sequence 1195	AA928656
Sequence 1196	AA932598
Sequence 1197	AA933048
Sequence 1198	AA933074
Sequence 1199	AA934755
Sequence 1200	AA935727
Sequence 1201	AA937381
Sequence 1202	AA946908
Sequence 1203	AA947751
Sequence 1204	AA948207
Sequence 1205	AA953714
Sequence 1206	AA954443
Sequence 1207	AA962240
Sequence 1208	AA969601
Sequence 1209	AA970732
Sequence 1210	AA972355
Sequence 1211	AA973461
Sequence 1212	AA975786
Sequence 1213	AA976655
Sequence 1214	AA985228
Sequence 1215	AA987866
Sequence 1216	AA988136
Sequence 1217	AA989185
Sequence 1218	AA989355
Sequence 1219	AA991239
Sequence 1220	AA992138
Sequence 1221	AA992486
Sequence 1222	AA992596
Sequence 1223	AA992733
Sequence 1224	AA994106
Sequence 1225	AA994997
Sequence 1226	AA999712
Sequence 1227	AF017688
Sequence 1228	AF034176
Sequence 1229	AI004415
Sequence 1230	AI004915
Sequence 1231	AI014649
Sequence 1232	AI017778
Sequence 1233	AI018321
Sequence 1234	AI026819
Sequence 1235	AI026942
Sequence 1236	AI027161
Sequence 1237	AI027465
Sequence 1238	AI027887
Sequence 1239	AI028127
Sequence 1240	AI028295
Sequence 1241	AI028512
Sequence 1242	AI031682
Sequence 1243	AI031950
Sequence 1244	AI033304
Sequence 1245	AI033712
Sequence 1246	AI037879

TABLE 8A

Sequence 1247	AI039087
Sequence 1248	AI039609
Sequence 1249	AI040048
Sequence 1250	AI041067
Sequence 1251	AI041309
Sequence 1252	AI051245
Sequence 1253	AI051775
Sequence 1254	AI052525
Sequence 1255	AI053702
Sequence 1256	AI056411
Sequence 1257	AI057064
Sequence 1258	AI075172
Sequence 1259	AI075782
Sequence 1260	AI077905
Sequence 1261	AI077939
Sequence 1262	AI079233
Sequence 1263	AI079730
Sequence 1264	AI079874
Sequence 1265	AI080476
Sequence 1266	AI081540
Sequence 1267	AI084459
Sequence 1268	AI085948
Sequence 1269	AI086608
Sequence 1270	AI086797
Sequence 1271	AI087367
Sequence 1272	AI087805
Sequence 1273	AI088809
Sequence 1274	AI089452
Sequence 1275	AI089794
Sequence 1276	AI090240
Sequence 1277	AI090872
Sequence 1278	AI090889
Sequence 1279	AI093207
Sequence 1280	AI094099
Sequence 1281	AI097213
Sequence 1282	AI123672
Sequence 1283	AI126345
Sequence 1284	AI126722
Sequence 1285	AI127013
Sequence 1286	AI127441
Sequence 1287	AI127556
Sequence 1288	AI127879
Sequence 1289	AI128031
Sequence 1290	AI129664
Sequence 1291	AI131218
Sequence 1292	AI139036
Sequence 1293	AI139802
Sequence 1294	AI140455
Sequence 1295	AI140804
Sequence 1296	AI140806
Sequence 1297	AI141893
Sequence 1298	AI142105
Sequence 1299	AI142138
Sequence 1300	AI142384
Sequence 1301	AI142427
Sequence 1302	AI143147
Sequence 1303	AI143203
Sequence 1304	AI143806
Sequence 1305	AI147899
Sequence 1306	AI148251
Sequence 1307	AI167324
Sequence 1308	AI184475
Sequence 1309	AI184787
Sequence 1310	AI184894
Sequence 1311	AI185064
Sequence 1312	AI185641
Sequence 1313	AI186139
Sequence 1314	AI187822
Sequence 1315	AI188333
Sequence 1316	AI188956
Sequence 1317	AI189381
Sequence 1318	AI189386
Sequence 1319	AI192724
Sequence 1320	AI192979
Sequence 1321	AI194068
Sequence 1322	AI198824
Sequence 1323	AI199897
Sequence 1324	AI202683
Sequence 1325	AI203647
Sequence 1326	AI205584
Sequence 1327	AI207168
Sequence 1328	AI207324
Sequence 1329	AI214206
Sequence 1330	AI215107
Sequence 1331	AI216969
Sequence 1332	AI216973
Sequence 1333	AI216978
Sequence 1334	AI216986
Sequence 1335	AI217003
Sequence 1336	AI219585
Sequence 1337	AI220569
Sequence 1338	AI225126
Sequence 1339	AI241236
Sequence 1340	AI241597
Sequence 1341	AI247571
Sequence 1342	AI248817
Sequence 1343	AI251337
Sequence 1344	AI251743
Sequence 1345	AI252283
Sequence 1346	AI252627
Sequence 1347	AI253288
Sequence 1348	AI253330
Sequence 1349	AI253335
Sequence 1350	AI253336

TABLE 8A

Sequence 1351	AI253347
Sequence 1352	AI253379
Sequence 1353	AI253388
Sequence 1354	AI253436
Sequence 1355	AI265770
Sequence 1356	AI267162
Sequence 1357	AI267185
Sequence 1358	AI267254
Sequence 1359	AI267282
Sequence 1360	AI267289
Sequence 1361	AI267307
Sequence 1362	AI267316
Sequence 1363	AI267351
Sequence 1364	AI267379
Sequence 1365	AI267454
Sequence 1366	AI267532
Sequence 1367	AI267658
Sequence 1368	AI268345
Sequence 1369	AI268430
Sequence 1370	AI268550
Sequence 1371	AI270350
Sequence 1372	AI275175
Sequence 1373	AI275379
Sequence 1374	AI277995
Sequence 1375	AI279790
Sequence 1376	AI280125
Sequence 1377	AI280830
Sequence 1378	AI281395
Sequence 1379	AI281815
Sequence 1380	AI284792
Sequence 1381	AI285111
Sequence 1382	AI291206
Sequence 1383	AI291282
Sequence 1384	AI291800
Sequence 1385	AI298000
Sequence 1386	AI298334
Sequence 1387	AI298496
Sequence 1388	AI299124
Sequence 1389	AI299928
Sequence 1390	AI300852
Sequence 1391	AI300947
Sequence 1392	AI301329
Sequence 1393	AI304857
Sequence 1394	AI305745
Sequence 1395	AI306478
Sequence 1396	AI307515
Sequence 1397	AI307557
Sequence 1398	AI307569
Sequence 1399	AI309334
Sequence 1400	AI312092
Sequence 1401	AI312353
Sequence 1402	AI332560
Sequence 1403	AI334450
Sequence 1404	AI335426
Sequence 1405	AI336224
Sequence 1406	AI338972
Sequence 1407	AI340510
Sequence 1408	AI340563
Sequence 1409	AI340653
Sequence 1410	AI341138
Sequence 1411	AI342937
Sequence 1412	AI343764
Sequence 1413	AI344026
Sequence 1414	AI344101
Sequence 1415	AI345143
Sequence 1416	AI345608
Sequence 1417	AI346017
Sequence 1418	AI346994
Sequence 1419	AI347602
Sequence 1420	AI349166
Sequence 1421	AI349430
Sequence 1422	AI349698
Sequence 1423	AI352510
Sequence 1424	AI352575
Sequence 1425	AI355149
Sequence 1426	AI357416
Sequence 1427	AI357472
Sequence 1428	AI357921
Sequence 1429	AI359254
Sequence 1430	AI366015
Sequence 1431	AI366381
Sequence 1432	AI367288
Sequence 1433	AI368587
Sequence 1434	AI369186
Sequence 1435	AI372834
Sequence 1436	AI375712
Sequence 1437	AI375834
Sequence 1438	AI376003
Sequence 1439	AI376751
Sequence 1440	AI376825
Sequence 1441	AI379830
Sequence 1442	AI392912
Sequence 1443	AI399801
Sequence 1444	AI401777
Sequence 1445	AI418469
Sequence 1446	AI418993
Sequence 1447	AI419347
Sequence 1448	AI419877
Sequence 1449	AI420543
Sequence 1450	AI421720
Sequence 1451	AI431290
Sequence 1452	AI431318
Sequence 1453	AI432942
Sequence 1454	AI433157

TABLE 8A

Sequence 1455	AI434250
Sequence 1456	AI435429
Sequence 1457	AI435548
Sequence 1458	AI439408
Sequence 1459	AI439702
Sequence 1460	AI453252
Sequence 1461	AI453689
Sequence 1462	AI457107
Sequence 1463	AI458677
Sequence 1464	AI469754
Sequence 1465	AI470208
Sequence 1466	AI470686
Sequence 1467	AI479200
Sequence 1468	AI479476
Sequence 1469	AI479992
Sequence 1470	AI493269
Sequence 1471	AI493487
Sequence 1472	AI499245
Sequence 1473	AI521639
Sequence 1474	AI523444
Sequence 1475	AI525843
Sequence 1476	AI537494
Sequence 1477	AI537716
Sequence 1478	AI538918
Sequence 1479	AI547125
Sequence 1480	AI557059
Sequence 1481	AI559274
Sequence 1482	AI559516
Sequence 1483	AI559586
Sequence 1484	AI565043
Sequence 1485	AI566084
Sequence 1486	AI568741
Sequence 1487	AI569519
Sequence 1488	AI570510
Sequence 1489	AI571186
Sequence 1490	AI572613
Sequence 1491	AI572752
Sequence 1492	AI572852
Sequence 1493	AI573140
Sequence 1494	AI581958
Sequence 1495	AI584139
Sequence 1496	AI589040
Sequence 1497	AI589993
Sequence 1498	AI590244
Sequence 1499	AI590981
Sequence 1500	AI608975
Sequence 1501	AI611676
Sequence 1502	AI612885
Sequence 1503	AI623627
Sequence 1504	AI624249
Sequence 1505	AI624515
Sequence 1506	AI625736
Sequence 1507	AI627852
Sequence 1508	AI628312
Sequence 1509	AI630330
Sequence 1510	AI630389
Sequence 1511	AI631515
Sequence 1512	AI632471
Sequence 1513	AI632536
Sequence 1514	AI632544
Sequence 1515	AI632869
Sequence 1516	AI635718
Sequence 1517	AI636308
Sequence 1518	AI638172
Sequence 1519	AI651114
Sequence 1520	AI651336
Sequence 1521	AI673251
Sequence 1522	AI674170
Sequence 1523	AI676122
Sequence 1524	AI676178
Sequence 1525	AI677829
Sequence 1526	AI678023
Sequence 1527	AI681953
Sequence 1528	AI683193
Sequence 1529	AI683431
Sequence 1530	AI684170
Sequence 1531	AI686949
Sequence 1532	AI689321
Sequence 1533	AI690344
Sequence 1534	AI690721
Sequence 1535	AI692191
Sequence 1536	AI692405
Sequence 1537	AI692703
Sequence 1538	AI693146
Sequence 1539	AI693922
Sequence 1540	AI694064
Sequence 1541	AI694087
Sequence 1542	AI695403
Sequence 1543	AI697049
Sequence 1544	AI698120
Sequence 1545	AI698989
Sequence 1546	AI701122
Sequence 1547	AI707589
Sequence 1548	AI708983
Sequence 1549	AI718099
Sequence 1550	AI718421
Sequence 1551	AI719420
Sequence 1552	AI721164
Sequence 1553	AI734101
Sequence 1554	AI738828
Sequence 1555	AI738971
Sequence 1556	AI740459
Sequence 1557	AI740534
Sequence 1558	AI740662

TABLE 8A

Sequence 1559	AI742461
Sequence 1560	AI749547
Sequence 1561	AI750332
Sequence 1562	AI750669
Sequence 1563	AI750682
Sequence 1564	AI750879
Sequence 1565	AI751017
Sequence 1566	AI751046
Sequence 1567	AI751428
Sequence 1568	AI752253
Sequence 1569	AI752254
Sequence 1570	AI752913
Sequence 1571	AI752957
Sequence 1572	AI752958
Sequence 1573	AI753080
Sequence 1574	AI753623
Sequence 1575	AI753667
Sequence 1576	AI753708
Sequence 1577	AI753968
Sequence 1578	AI754104
Sequence 1579	AI754431
Sequence 1580	AI754463
Sequence 1581	AI755118
Sequence 1582	AI755144
Sequence 1583	AI755283
Sequence 1584	AI760367
Sequence 1585	AI760770
Sequence 1586	AI760908
Sequence 1587	AI766705
Sequence 1588	AI767296
Sequence 1589	AI796711
Sequence 1590	AI796793
Sequence 1591	AI798680
Sequence 1592	AI807806
Sequence 1593	AI809369
Sequence 1594	AI810190
Sequence 1595	AI811548
Sequence 1596	AI811719
Sequence 1597	AI815380
Sequence 1598	AI815445
Sequence 1599	AI815655
Sequence 1600	AI818599
Sequence 1601	AI823903
Sequence 1602	AI824951
Sequence 1603	AI827394
Sequence 1604	AI829472
Sequence 1605	AI829878
Sequence 1606	AI857956
Sequence 1607	AI860354
Sequence 1608	AI861786
Sequence 1609	AI862171
Sequence 1610	AI864040
Sequence 1611	AI866692
Sequence 1612	AI866736
Sequence 1613	AI866820
Sequence 1614	AI867101
Sequence 1615	AI878826
Sequence 1616	AI878894
Sequence 1617	AI884829
Sequence 1618	AI888924
Sequence 1619	AI890362
Sequence 1620	AI912782
Sequence 1621	AI923459
Sequence 1622	AI923980
Sequence 1623	AI925203
Sequence 1624	AI927130
Sequence 1625	AI932225
Sequence 1626	AI935315
Sequence 1627	AI937296
Sequence 1628	AI953354
Sequence 1629	AI962046
Sequence 1630	AI970562
Sequence 1631	AI972614
Sequence 1632	AI982899
Sequence 1633	AI986352
Sequence 1634	AL035875
Sequence 1635	AL035924
Sequence 1636	AL036003
Sequence 1637	AL036026
Sequence 1638	AL036165
Sequence 1639	AL036211
Sequence 1640	AL036650
Sequence 1641	AL036732
Sequence 1642	AL036984
Sequence 1643	AL037114
Sequence 1644	AL037123
Sequence 1645	AL037961
Sequence 1646	AL037964
Sequence 1647	AL038648
Sequence 1648	AL039504
Sequence 1649	AL039797
Sequence 1650	AL040084
Sequence 1651	AL042869
Sequence 1652	AL042948
Sequence 1653	AL043113
Sequence 1654	AL043232
Sequence 1655	AL043665
Sequence 1656	AL044967
Sequence 1657	AL045399
Sequence 1658	AL046250
Sequence 1659	AL046839
Sequence 1660	AL047334
Sequence 1661	AL047434
Sequence 1662	AL047758

TABLE 8A

Sequence 1663	AL047775
Sequence 1664	AL047980
Sequence 1665	AL048044
Sequence 1666	AL048056
Sequence 1667	AL048446
Sequence 1668	AL048540
Sequence 1669	AL048846
Sequence 1670	AL048962
Sequence 1671	AL049058
Sequence 1672	AL079445
Sequence 1673	AL079833
Sequence 1674	AL079980
Sequence 1675	AW003634
Sequence 1676	AW006783
Sequence 1677	AW014416
Sequence 1678	AW020650
Sequence 1679	AW022694
Sequence 1680	AW028560
Sequence 1681	AW044647
Sequence 1682	C00568
Sequence 1683	C01283
Sequence 1684	C02426
Sequence 1685	C06300
Sequence 1686	C17474
Sequence 1687	C17916
Sequence 1688	C18921
Sequence 1689	C18929
Sequence 1690	C21459
Sequence 1691	D31249
Sequence 1692	D31345
Sequence 1693	D52414
Sequence 1694	D55094
Sequence 1695	D56120
Sequence 1696	D56406
Sequence 1697	D58753
Sequence 1698	D79157
Sequence 1699	D82223
Sequence 1700	D82427
Sequence 1701	F00559
Sequence 1702	F07635
Sequence 1703	F11839
Sequence 1704	F22810
Sequence 1705	F24734
Sequence 1706	F25640
Sequence 1707	F35702
Sequence 1708	F37503
Sequence 1709	H00733
Sequence 1710	H00824
Sequence 1711	H05057
Sequence 1712	H07025
Sequence 1713	H08432
Sequence 1714	H08478
Sequence 1715	H09335
Sequence 1716	H11127
Sequence 1717	H11562
Sequence 1718	H13072
Sequence 1719	H16015
Sequence 1720	H16051
Sequence 1721	H16704
Sequence 1722	H17184
Sequence 1723	H21245
Sequence 1724	H21540
Sequence 1725	H22088
Sequence 1726	H25625
Sequence 1727	H25972
Sequence 1728	H27048
Sequence 1729	H42664
Sequence 1730	H45568
Sequence 1731	H45841
Sequence 1732	H49263
Sequence 1733	H49289
Sequence 1734	H49828
Sequence 1735	H53915
Sequence 1736	H57887
Sequence 1737	H61835
Sequence 1738	H62103
Sequence 1739	H63826
Sequence 1740	H69156
Sequence 1741	H70394
Sequence 1742	H79088
Sequence 1743	H87703
Sequence 1744	H90718
Sequence 1745	H92372
Sequence 1746	H93692
Sequence 1747	H95529
Sequence 1748	H96289
Sequence 1749	H96660
Sequence 1750	H98987
Sequence 1751	M62189
Sequence 1752	M77945
Sequence 1753	M85677
Sequence 1754	N20960
Sequence 1755	N21313
Sequence 1756	N23530
Sequence 1757	N27799
Sequence 1758	N27916
Sequence 1759	N29763
Sequence 1760	N31283
Sequence 1761	N31866
Sequence 1762	N35646
Sequence 1763	N36068
Sequence 1764	N36588
Sequence 1765	N40017
Sequence 1766	N40023

TABLE 8A

Sequence 1767	N40140
Sequence 1768	N41577
Sequence 1769	N41842
Sequence 1770	N42500
Sequence 1771	N46050
Sequence 1772	N56836
Sequence 1773	N57241
Sequence 1774	N58035
Sequence 1775	N58936
Sequence 1776	N59281
Sequence 1777	N68247
Sequence 1778	N71055
Sequence 1779	N75133
Sequence 1780	N75464
Sequence 1781	N86077
Sequence 1782	N87113
Sequence 1783	N89240
Sequence 1784	N89307
Sequence 1785	N92469
Sequence 1786	N93894
Sequence 1787	N99217
Sequence 1788	N99356
Sequence 1789	N99391
Sequence 1790	R02801
Sequence 1791	R12175
Sequence 1792	R14044
Sequence 1793	R15357
Sequence 1794	R16006
Sequence 1795	R17092
Sequence 1796	R17722
Sequence 1797	R19529
Sequence 1798	R19977
Sequence 1799	R21136
Sequence 1800	R22748
Sequence 1801	R29720
Sequence 1802	R37791
Sequence 1803	R50870
Sequence 1804	R51242
Sequence 1805	R53323
Sequence 1806	R55140
Sequence 1807	R55150
Sequence 1808	R55626
Sequence 1809	R59135
Sequence 1810	R59562
Sequence 1811	R61601
Sequence 1812	R63104
Sequence 1813	R63747
Sequence 1814	R64693
Sequence 1815	R64716
Sequence 1816	R66262
Sequence 1817	R69853
Sequence 1818	R78287
Sequence 1819	R83213
Sequence 1820	R86035
Sequence 1821	R91266
Sequence 1822	R97846
Sequence 1823	T06718
Sequence 1824	T08377
Sequence 1825	T12310
Sequence 1826	T17422
Sequence 1827	T18962
Sequence 1828	T27413
Sequence 1829	T27579
Sequence 1830	T30099
Sequence 1831	T30369
Sequence 1832	T33406
Sequence 1833	T34178
Sequence 1834	T36122
Sequence 1835	T54750
Sequence 1836	T55728
Sequence 1837	T80061
Sequence 1838	T81658
Sequence 1839	T82907
Sequence 1840	T83117
Sequence 1841	T90236
Sequence 1842	T91644
Sequence 1843	T92021
Sequence 1844	T94974
Sequence 1845	U54711
Sequence 1846	U66691
Sequence 1847	U77054
Sequence 1848	U91919
Sequence 1849	W01713
Sequence 1850	W03191
Sequence 1851	W03482
Sequence 1852	W21108
Sequence 1853	W21572
Sequence 1854	W22929
Sequence 1855	W23214
Sequence 1856	W23834
Sequence 1857	W26401
Sequence 1858	W27126
Sequence 1859	W28005
Sequence 1860	W28729
Sequence 1861	W32947
Sequence 1862	W35166
Sequence 1863	W52669
Sequence 1864	W53029
Sequence 1865	W55924
Sequence 1866	W56081
Sequence 1867	W60565
Sequence 1868	W60820
Sequence 1869	W65294
Sequence 1870	W68261

TABLE 8A

Sequence 1871	W69472	Sequence 1923	AB013924
Sequence 1872	W72665	Sequence 1924	AB014542
Sequence 1873	W73087	Sequence 1925	AB014543
Sequence 1874	W76300	Sequence 1926	AB014571
Sequence 1875	W79283	Sequence 1927	AB014577
Sequence 1876	W79731	Sequence 1928	AB014587
Sequence 1877	W81662	Sequence 1929	AB014598
Sequence 1878	W84808	Sequence 1930	AB014599
Sequence 1879	W86947	Sequence 1931	AB015051
Sequence 1880	W88681	Sequence 1932	AB015234
Sequence 1881	W90323	Sequence 1933	AB015907
Sequence 1882	W94460	Sequence 1934	AB017019
Sequence 1883	W99251	Sequence 1935	AB018080
Sequence 1884	Z19171	Sequence 1936	AB018320
Sequence 1885	Z42302	Sequence 1937	AB018331
Sequence 1886	Z43536	Sequence 1938	AB018334
Sequence 1887	Z45184	Sequence 1939	AB019392
Sequence 1888	A21185	Sequence 1940	AB019563
Sequence 1889	A21187	Sequence 1941	AB019565
Sequence 1890	AB000220	Sequence 1942	AB019568
Sequence 1891	AB000450	Sequence 1943	AB020637
Sequence 1892	AB001636	Sequence 1944	AB020662
Sequence 1893	AB002330	Sequence 1945	AB020665
Sequence 1894	AB002357	Sequence 1946	AB020680
Sequence 1895	AB002382	Sequence 1947	AB020692
Sequence 1896	AB004066	Sequence 1948	AB020981
Sequence 1897	AB004304	Sequence 1949	AB021288
Sequence 1898	AB004852	Sequence 1950	AB021654
Sequence 1899	AB005548	Sequence 1951	AB022651
Sequence 1900	AB006651	Sequence 1952	AB022653
Sequence 1901	AB006679	Sequence 1953	AB022654
Sequence 1902	AB006746	Sequence 1954	AB022656
Sequence 1903	AB007191	Sequence 1955	AB023137
Sequence 1904	AB007878	Sequence 1956	AB023146
Sequence 1905	AB007885	Sequence 1957	AB023209
Sequence 1906	AB007892	Sequence 1958	AB023224
Sequence 1907	AB007916	Sequence 1959	AB023229
Sequence 1908	AB007949	Sequence 1960	AB024313
Sequence 1909	AB008109	Sequence 1961	AB026722
Sequence 1910	AB009282	Sequence 1962	AB028624
Sequence 1911	AB009284	Sequence 1963	AB029000
Sequence 1912	AB010710	Sequence 1964	AB029005
Sequence 1913	AB011079	Sequence 1965	AC000386
Sequence 1914	AB011100	Sequence 1966	AC004381
Sequence 1915	AB011159	Sequence 1967	AC004616
Sequence 1916	AB011164	Sequence 1968	AC004699
Sequence 1917	AB011169	Sequence 1969	AC005193
Sequence 1918	AB011173	Sequence 1970	AC006322
Sequence 1919	AB011181	Sequence 1971	AC006960
Sequence 1920	AB011472	Sequence 1972	AF000148
Sequence 1921	AB012190	Sequence 1973	AF000152
Sequence 1922	AB012910	Sequence 1974	AF000381

TABLE 8A

Sequence 1975	AF000670
Sequence 1976	AF001862
Sequence 1977	AF001945
Sequence 1978	AF002715
Sequence 1979	AF003521
Sequence 1980	AF003594
Sequence 1981	AF005654
Sequence 1982	AF006088
Sequence 1983	AF006259
Sequence 1984	AF006305
Sequence 1985	AF007217
Sequence 1986	AF011920
Sequence 1987	AF013759
Sequence 1988	AF015041
Sequence 1989	AF015283
Sequence 1990	AF015767
Sequence 1991	AF015926
Sequence 1992	AF016266
Sequence 1993	AF016371
Sequence 1994	AF017257
Sequence 1995	AF017418
Sequence 1996	AF019214
Sequence 1997	AF019225
Sequence 1998	AF020043
Sequence 1999	AF020351
Sequence 2000	AF022229
Sequence 2001	AF022913
Sequence 2002	AF023259
Sequence 2003	AF025438
Sequence 2004	AF025998
Sequence 2005	AF026292
Sequence 2006	AF026381
Sequence 2007	AF026692
Sequence 2008	AF026939
Sequence 2009	AF027158
Sequence 2010	AF027292
Sequence 2011	AF027302
Sequence 2012	AF028832
Sequence 2013	AF029669
Sequence 2014	AF029914
Sequence 2015	AF030234
Sequence 2016	AF031385
Sequence 2017	AF031647
Sequence 2018	AF032456
Sequence 2019	AF033095
Sequence 2020	AF034607
Sequence 2021	AF035034
Sequence 2022	AF035286
Sequence 2023	AF035289
Sequence 2024	AF035304
Sequence 2025	AF035309
Sequence 2026	AF035313
Sequence 2027	AF035320
Sequence 2028	AF035360
Sequence 2029	AF035582
Sequence 2030	AF035784
Sequence 2031	AF035811
Sequence 2032	AF035933
Sequence 2033	AF036331
Sequence 2034	AF037448
Sequence 2035	AF038404
Sequence 2036	AF038952
Sequence 2037	AF039701
Sequence 2038	AF042166
Sequence 2039	AF042331
Sequence 2040	AF042331
Sequence 2041	AF043294
Sequence 2042	AF044333
Sequence 2043	AF044588
Sequence 2044	AF044955
Sequence 2045	AF044956
Sequence 2046	AF045229
Sequence 2047	AF045941
Sequence 2048	AF046001
Sequence 2049	AF047181
Sequence 2050	AF047433
Sequence 2051	AF047472
Sequence 2052	AF047473
Sequence 2053	AF049140
Sequence 2054	AF049672
Sequence 2055	AF049688
Sequence 2056	AF049910
Sequence 2057	AF050638
Sequence 2058	AF051099
Sequence 2059	AF052093
Sequence 2060	AF052094
Sequence 2061	AF052124
Sequence 2062	AF052578
Sequence 2063	AF053233
Sequence 2064	AF053304
Sequence 2065	AF053641
Sequence 2066	AF054175
Sequence 2067	AF054186
Sequence 2068	AF054284
Sequence 2069	AF054663
Sequence 2070	AF054838
Sequence 2071	AF054990
Sequence 2072	AF055015
Sequence 2073	AF055028
Sequence 2074	AF055033
Sequence 2075	AF056717
Sequence 2076	AF057160
Sequence 2077	AF058392
Sequence 2078	AF059611

TABLE 8A

Sequence 2079	AF060228
Sequence 2080	AF060567
Sequence 2081	AF061737
Sequence 2082	AF061741
Sequence 2083	AF062165
Sequence 2084	AF062346
Sequence 2085	AF063308
Sequence 2086	AF063613
Sequence 2087	AF064092
Sequence 2088	AF065388
Sequence 2089	AF067168
Sequence 2090	AF068235
Sequence 2091	AF068836
Sequence 2092	AF069601
Sequence 2093	AF069668
Sequence 2094	AF069765
Sequence 2095	AF069904
Sequence 2096	AF070523
Sequence 2097	AF070555
Sequence 2098	AF070556
Sequence 2099	AF070561
Sequence 2100	AF070562
Sequence 2101	AF070596
Sequence 2102	AF070609
Sequence 2103	AF070626
Sequence 2104	AF070649
Sequence 2105	AF070650
Sequence 2106	AF070657
Sequence 2107	AF070659
Sequence 2108	AF070661
Sequence 2109	AF070664
Sequence 2110	AF070669
Sequence 2111	AF070672
Sequence 2112	AF070674
Sequence 2113	AF071594
Sequence 2114	AF072810
Sequence 2115	AF075242
Sequence 2116	AF075587
Sequence 2117	AF075601
Sequence 2118	AF077030
Sequence 2119	AF077042
Sequence 2120	AF077043
Sequence 2121	AF077045
Sequence 2122	AF077200
Sequence 2123	AF077202
Sequence 2124	AF077207
Sequence 2125	AF077367
Sequence 2126	AF078845
Sequence 2127	AF078848
Sequence 2128	AF078850
Sequence 2129	AF078855
Sequence 2130	AF078858
Sequence 2131	AF078862
Sequence 2132	AF078863
Sequence 2133	AF079566
Sequence 2134	AF081192
Sequence 2135	AF081282
Sequence 2136	AF082888
Sequence 2137	AF083248
Sequence 2138	AF083441
Sequence 2139	AF084457
Sequence 2140	AF085359
Sequence 2141	AF085360
Sequence 2142	AF086002
Sequence 2143	AF086003
Sequence 2144	AF086116
Sequence 2145	AF086120
Sequence 2146	AF086161
Sequence 2147	AF086183
Sequence 2148	AF086205
Sequence 2149	AF086322
Sequence 2150	AF086330
Sequence 2151	AF086336
Sequence 2152	AF086408
Sequence 2153	AF086446
Sequence 2154	AF086484
Sequence 2155	AF086545
Sequence 2156	AF086904
Sequence 2157	AF091076
Sequence 2158	AF091263
Sequence 2159	AF093535
Sequence 2160	AF095288
Sequence 2161	AF095289
Sequence 2162	AF097725
Sequence 2163	AF097874
Sequence 2164	AF100737
Sequence 2165	AF100741
Sequence 2166	AF100756
Sequence 2167	AF100756
Sequence 2168	AF101051
Sequence 2169	AF102826
Sequence 2170	AF103415
Sequence 2171	AF103436
Sequence 2172	AF103559
Sequence 2173	AF103564
Sequence 2174	AF103572
Sequence 2175	AF109196
Sequence 2176	AF110647
Sequence 2177	AF111713
Sequence 2178	AF113887
Sequence 2179	AF114263
Sequence 2180	AF115345
Sequence 2181	AF121856
Sequence 2182	AF124440

TABLE 8A

Sequence 2183	AF125182
Sequence 2184	AF125507
Sequence 2185	AF127918
Sequence 2186	AF131739
Sequence 2187	AF131791
Sequence 2188	AF131802
Sequence 2189	AF131848
Sequence 2190	AF131856
Sequence 2191	AF132959
Sequence 2192	AF138300
Sequence 2193	AF144103
Sequence 2194	AF144755
Sequence 2195	AF145316
Sequence 2196	AF146018
Sequence 2197	AF147331
Sequence 2198	AF147336
Sequence 2199	AF147367
Sequence 2200	AF147410
Sequence 2201	AF147412
Sequence 2202	AF151807
Sequence 2203	AF151826
Sequence 2204	AF151840
Sequence 2205	AF151868
Sequence 2206	AF151896
Sequence 2207	AF151905
Sequence 2208	AF151908
Sequence 2209	AF152097
Sequence 2210	AF153201
Sequence 2211	AF153608
Sequence 2212	AF153609
Sequence 2213	AF156965
Sequence 2214	AF158255
Sequence 2215	AF168956
Sequence 2216	AF172398
Sequence 2217	AF176642
Sequence 2218	AF179212
Sequence 2219	AF182292
Sequence 2220	AJ000519
Sequence 2221	AJ001348
Sequence 2222	AJ001382
Sequence 2223	AJ001634
Sequence 2224	AJ002955
Sequence 2225	AJ004913
Sequence 2226	AJ004954
Sequence 2227	AJ004955
Sequence 2228	AJ004956
Sequence 2229	AJ005766
Sequence 2230	AJ006266
Sequence 2231	AJ010069
Sequence 2232	AJ010442
Sequence 2233	AJ010444
Sequence 2234	AJ010446
Sequence 2235	AJ010901
Sequence 2236	AJ011007
Sequence 2237	AJ012077
Sequence 2238	AJ012078
Sequence 2239	AJ012409
Sequence 2240	AJ131720
Sequence 2241	AJ132502
Sequence 2242	AJ132694
Sequence 2243	AJ223183
Sequence 2244	AJ223812
Sequence 2245	AJ228139
Sequence 2246	AJ236552
Sequence 2247	AJ237946
Sequence 2248	AJ238098
Sequence 2249	AJ241361
Sequence 2250	AJ241363
Sequence 2251	AJ388655
Sequence 2252	AL021683
Sequence 2253	AL030996
Sequence 2254	AL031775
Sequence 2255	AL034349
Sequence 2256	AL034417
Sequence 2257	AL034430
Sequence 2258	AL049229
Sequence 2259	AL049346
Sequence 2260	AL049367
Sequence 2261	AL049381
Sequence 2262	AL049824
Sequence 2263	AL049940
Sequence 2264	AL049969
Sequence 2265	AL049999
Sequence 2266	AL050003
Sequence 2267	AL050011
Sequence 2268	AL050022
Sequence 2269	AL050120
Sequence 2270	AL050137
Sequence 2271	AL050179
Sequence 2272	AL050255
Sequence 2273	AL050272
Sequence 2274	AL050289
Sequence 2275	AL050290
Sequence 2276	AL050353
Sequence 2277	AL050380
Sequence 2278	AL050386
Sequence 2279	AL080097
Sequence 2280	AL080099
Sequence 2281	AL080102
Sequence 2282	AL080150
Sequence 2283	AL080185
Sequence 2284	AL080192
Sequence 2285	AL096713
Sequence 2286	AL096719

TABLE 8A

Sequence 2287	AL096857
Sequence 2288	AL096858
Sequence 2289	AL109788
Sequence 2290	AL110153
Sequence 2291	AL110161
Sequence 2292	AL117561
Sequence 2293	AL117595
Sequence 2294	AL117604
Sequence 2295	AL117651
Sequence 2296	AR003350
Sequence 2297	D00017
Sequence 2298	D00039
Sequence 2299	D00068
Sequence 2300	D00099
Sequence 2301	D00760
Sequence 2302	D01059
Sequence 2303	D11094
Sequence 2304	D11428
Sequence 2305	D12676
Sequence 2306	D13630
Sequence 2307	D13639
Sequence 2308	D13665
Sequence 2309	D13666
Sequence 2310	D13866
Sequence 2311	D13988
Sequence 2312	D14041
Sequence 2313	D14446
Sequence 2314	D14657
Sequence 2315	D14710
Sequence 2316	D15050
Sequence 2317	D16562
Sequence 2318	D16947
Sequence 2319	D16985
Sequence 2320	D17032
Sequence 2321	D17039
Sequence 2322	D17174
Sequence 2323	D17554
Sequence 2324	D17793
Sequence 2325	D21092
Sequence 2326	D21254
Sequence 2327	D21262
Sequence 2328	D23661
Sequence 2329	D25274
Sequence 2330	D26125
Sequence 2331	D26129
Sequence 2332	D26443
Sequence 2333	D26598
Sequence 2334	D26599
Sequence 2335	D26600
Sequence 2336	D28473
Sequence 2337	D29640
Sequence 2338	D29641
Sequence 2339	D29956
Sequence 2340	D30655
Sequence 2341	D30658
Sequence 2342	D31885
Sequence 2343	D37766
Sequence 2344	D37991
Sequence 2345	D38073
Sequence 2346	D38524
Sequence 2347	D38551
Sequence 2348	D38553
Sequence 2349	D42040
Sequence 2350	D42042
Sequence 2351	D42073
Sequence 2352	D42084
Sequence 2353	D42085
Sequence 2354	D42087
Sequence 2355	D45198
Sequence 2356	D45248
Sequence 2357	D45421
Sequence 2358	D45915
Sequence 2359	D49372
Sequence 2360	D49387
Sequence 2361	D49396
Sequence 2362	D49489
Sequence 2363	D49743
Sequence 2364	D50310
Sequence 2365	D50371
Sequence 2366	D50405
Sequence 2367	D50420
Sequence 2368	D50487
Sequence 2369	D50525
Sequence 2370	D55671
Sequence 2371	D59253
Sequence 2372	D63874
Sequence 2373	D63878
Sequence 2374	D63881
Sequence 2375	D67031
Sequence 2376	D78151
Sequence 2377	D78275
Sequence 2378	D78611
Sequence 2379	D79985
Sequence 2380	D79986
Sequence 2381	D79996
Sequence 2382	D79997
Sequence 2383	D80000
Sequence 2384	D80001
Sequence 2385	D83018
Sequence 2386	D83197
Sequence 2387	D84105
Sequence 2388	D84488
Sequence 2389	D86043
Sequence 2390	D86227

TABLE 8A

Sequence 2391	D86955
Sequence 2392	D87127
Sequence 2393	D87367
Sequence 2394	D87434
Sequence 2395	D87666
Sequence 2396	D87735
Sequence 2397	D87742
Sequence 2398	D88153
Sequence 2399	D88674
Sequence 2400	D89937
Sequence 2401	D90373
Sequence 2402	D90453
Sequence 2403	E00199
Sequence 2404	E01198
Sequence 2405	E01630
Sequence 2406	E01650
Sequence 2407	E01888
Sequence 2408	E01915
Sequence 2409	E01954
Sequence 2410	E01972
Sequence 2411	E01979
Sequence 2412	E02516
Sequence 2413	E02628
Sequence 2414	E03414
Sequence 2415	E03814
Sequence 2416	E05213
Sequence 2417	E06721
Sequence 2418	E07165
Sequence 2419	E07218
Sequence 2420	E07643
Sequence 2421	E08291
Sequence 2422	E08292
Sequence 2423	E08293
Sequence 2424	E08294
Sequence 2425	E08663
Sequence 2426	G48728
Sequence 2427	G52838
Sequence 2428	J00194
Sequence 2429	J00196
Sequence 2430	J02642
Sequence 2431	J02645
Sequence 2432	J02814
Sequence 2433	J02853
Sequence 2434	J02923
Sequence 2435	J03015
Sequence 2436	J03037
Sequence 2437	J03040
Sequence 2438	J03048
Sequence 2439	J03143
Sequence 2440	J03171
Sequence 2441	J03209
Sequence 2442	J03223
Sequence 2443	J03248
Sequence 2444	J03358
Sequence 2445	J03464
Sequence 2446	J03503
Sequence 2447	J03528
Sequence 2448	J03537
Sequence 2449	J03575
Sequence 2450	J03580
Sequence 2451	J03745
Sequence 2452	J03801
Sequence 2453	J03802
Sequence 2454	J03804
Sequence 2455	J03827
Sequence 2456	J03909
Sequence 2457	J03934
Sequence 2458	J04080
Sequence 2459	J04162
Sequence 2460	J04164
Sequence 2461	J04208
Sequence 2462	J05192
Sequence 2463	J05249
Sequence 2464	J05633
Sequence 2465	K00422
Sequence 2466	K00558
Sequence 2467	K00799
Sequence 2468	K01144
Sequence 2469	K01171
Sequence 2470	K01396
Sequence 2471	K02215
Sequence 2472	K02765
Sequence 2473	L00160
Sequence 2474	L01279
Sequence 2475	L01411
Sequence 2476	L01413
Sequence 2477	L02426
Sequence 2478	L03146
Sequence 2479	L03152
Sequence 2480	L03156
Sequence 2481	L03162
Sequence 2482	L03168
Sequence 2483	L03203
Sequence 2484	L05095
Sequence 2485	L05096
Sequence 2486	L05425
Sequence 2487	L06070
Sequence 2488	L06145
Sequence 2489	L07393
Sequence 2490	L07515
Sequence 2491	L07540
Sequence 2492	L07633
Sequence 2493	L08441
Sequence 2494	L09159

TABLE 8A

Sequence 2495	L11566
Sequence 2496	L11700
Sequence 2497	L12110
Sequence 2498	L12168
Sequence 2499	L12535
Sequence 2500	L13799
Sequence 2501	L13923
Sequence 2502	L15702
Sequence 2503	L16510
Sequence 2504	L19597
Sequence 2505	L19908
Sequence 2506	L19956
Sequence 2507	L20463
Sequence 2508	L20941
Sequence 2509	L22157
Sequence 2510	L22569
Sequence 2511	L23808
Sequence 2512	L25259
Sequence 2513	L25851
Sequence 2514	L27211
Sequence 2515	L29158
Sequence 2516	L32748
Sequence 2517	L33179
Sequence 2518	L33801
Sequence 2519	L33854
Sequence 2520	L34155
Sequence 2521	L34600
Sequence 2522	L35594
Sequence 2523	L36983
Sequence 2524	L37368
Sequence 2525	L38486
Sequence 2526	L38562
Sequence 2527	L38951
Sequence 2528	L39061
Sequence 2529	L40736
Sequence 2530	L43821
Sequence 2531	L47125
Sequence 2532	L47574
Sequence 2533	L47647
Sequence 2534	L49054
Sequence 2535	L77567
Sequence 2536	L78132
Sequence 2537	M10036
Sequence 2538	M10119
Sequence 2539	M10905
Sequence 2540	M11147
Sequence 2541	M11313
Sequence 2542	M11353
Sequence 2543	M11433
Sequence 2544	M11507
Sequence 2545	M11560
Sequence 2546	M11718
Sequence 2547	M11937
Sequence 2548	M11948
Sequence 2549	M12267
Sequence 2550	M12938
Sequence 2551	M13656
Sequence 2552	M14200
Sequence 2553	M14219
Sequence 2554	M14221
Sequence 2555	M14328
Sequence 2556	M14354
Sequence 2557	M14539
Sequence 2558	M15796
Sequence 2559	M16038
Sequence 2560	M16342
Sequence 2561	M16957
Sequence 2562	M17017
Sequence 2563	M17517
Sequence 2564	M17733
Sequence 2565	M17885
Sequence 2566	M17886
Sequence 2567	M18216
Sequence 2568	M19308
Sequence 2569	M19715
Sequence 2570	M19723
Sequence 2571	M19888
Sequence 2572	M20259
Sequence 2573	M20471
Sequence 2574	M20867
Sequence 2575	M22009
Sequence 2576	M22382
Sequence 2577	M22538
Sequence 2578	M22590
Sequence 2579	M22918
Sequence 2580	M22920
Sequence 2581	M24194
Sequence 2582	M24594
Sequence 2583	M24630
Sequence 2584	M25246
Sequence 2585	M25280
Sequence 2586	M25756
Sequence 2587	M26066
Sequence 2588	M26663
Sequence 2589	M26880
Sequence 2590	M27504
Sequence 2591	M27635
Sequence 2592	M28424
Sequence 2593	M28696
Sequence 2594	M29064
Sequence 2595	M29467
Sequence 2596	M29469
Sequence 2597	M29540
Sequence 2598	M29548

TABLE 8A

Sequence 2599	M29696	Sequence 2651	M83772
Sequence 2600	M29870	Sequence 2652	M84443
Sequence 2601	M29872	Sequence 2653	M85038
Sequence 2602	M30608	Sequence 2654	M86609
Sequence 2603	M31159	Sequence 2655	M87068
Sequence 2604	M31165	Sequence 2656	M87284
Sequence 2605	M31212	Sequence 2657	M87339
Sequence 2606	M31606	Sequence 2658	M87789
Sequence 2607	M33195	Sequence 2659	M88468
Sequence 2608	M34455	Sequence 2660	M90104
Sequence 2609	M34668	Sequence 2661	M90809
Sequence 2610	M35198	Sequence 2662	M93425
Sequence 2611	M35543	Sequence 2663	M93426
Sequence 2612	M36072	Sequence 2664	M93651
Sequence 2613	M36501	Sequence 2665	M95929
Sequence 2614	M37033	Sequence 2666	M96803
Sequence 2615	M37104	Sequence 2667	M97856
Sequence 2616	M38267	Sequence 2668	S42404
Sequence 2617	M55150	Sequence 2669	S47339
Sequence 2618	M55542	Sequence 2670	S50732
Sequence 2619	M55543	Sequence 2671	S59049
Sequence 2620	M55618	Sequence 2672	S62490
Sequence 2621	M58549	Sequence 2673	S68015
Sequence 2622	M60333	Sequence 2674	S68288
Sequence 2623	M60334	Sequence 2675	S69002
Sequence 2624	M60457	Sequence 2676	S69272
Sequence 2625	M61715	Sequence 2677	S70290
Sequence 2626	M62896	Sequence 2678	S71381
Sequence 2627	M62898	Sequence 2679	S73813
Sequence 2628	M63180	Sequence 2680	S74678
Sequence 2629	M63438	Sequence 2681	S74681
Sequence 2630	M63488	Sequence 2682	S74728
Sequence 2631	M63573	Sequence 2683	S75295
Sequence 2632	M63838	Sequence 2684	S75548
Sequence 2633	M64241	Sequence 2685	S77601
Sequence 2634	M65209	Sequence 2686	S78085
Sequence 2635	M65217	Sequence 2687	S78271
Sequence 2636	M65292	Sequence 2688	S78569
Sequence 2637	M69066	Sequence 2689	S79639
Sequence 2638	M69181	Sequence 2690	S79895
Sequence 2639	M73547	Sequence 2691	S82081
Sequence 2640	M73713	Sequence 2692	S82470
Sequence 2641	M74019	Sequence 2693	S87759
Sequence 2642	M74558	Sequence 2694	U01923
Sequence 2643	M74775	Sequence 2695	U02032
Sequence 2644	M76729	Sequence 2696	U02493
Sequence 2645	M77233	Sequence 2697	U03891
Sequence 2646	M77693	Sequence 2698	U04313
Sequence 2647	M81757	Sequence 2699	U04735
Sequence 2648	M81844	Sequence 2700	U05875
Sequence 2649	M83248	Sequence 2701	U07151
Sequence 2650	M83653	Sequence 2702	U07431

TABLE 8A

Sequence 2703	U07516
Sequence 2704	U07550
Sequence 2705	U07919
Sequence 2706	U08815
Sequence 2707	U09196
Sequence 2708	U09278
Sequence 2709	U09623
Sequence 2710	U09813
Sequence 2711	U10117
Sequence 2712	U10439
Sequence 2713	U10485
Sequence 2714	U10550
Sequence 2715	U12170
Sequence 2716	U13369
Sequence 2717	U13665
Sequence 2718	U13738
Sequence 2719	U14187
Sequence 2720	U14394
Sequence 2721	U14603
Sequence 2722	U14750
Sequence 2723	U14966
Sequence 2724	U14967
Sequence 2725	U14968
Sequence 2726	U14970
Sequence 2727	U15008
Sequence 2728	U16306
Sequence 2729	U17714
Sequence 2730	U18728
Sequence 2731	U19769
Sequence 2732	U21128
Sequence 2733	U21911
Sequence 2734	U24105
Sequence 2735	U25789
Sequence 2736	U25804
Sequence 2737	U27143
Sequence 2738	U27460
Sequence 2739	U27467
Sequence 2740	U27768
Sequence 2741	U28249
Sequence 2742	U28488
Sequence 2743	U32989
Sequence 2744	U33760
Sequence 2745	U33818
Sequence 2746	U36336
Sequence 2747	U36764
Sequence 2748	U37230
Sequence 2749	U37283
Sequence 2750	U37519
Sequence 2751	U39050
Sequence 2752	U39360
Sequence 2753	U41060
Sequence 2754	U41371
Sequence 2755	U41514
Sequence 2756	U41515
Sequence 2757	U41569
Sequence 2758	U41850
Sequence 2759	U42457
Sequence 2760	U42458
Sequence 2761	U42593
Sequence 2762	U42594
Sequence 2763	U43701
Sequence 2764	U44772
Sequence 2765	U48251
Sequence 2766	U50079
Sequence 2767	U50534
Sequence 2768	U50939
Sequence 2769	U51478
Sequence 2770	U51920
Sequence 2771	U51990
Sequence 2772	U54558
Sequence 2773	U54562
Sequence 2774	U56255
Sequence 2775	U57091
Sequence 2776	U57693
Sequence 2777	U57847
Sequence 2778	U59288
Sequence 2779	U59808
Sequence 2780	U60061
Sequence 2781	U60067
Sequence 2782	U60068
Sequence 2783	U60115
Sequence 2784	U60337
Sequence 2785	U60975
Sequence 2786	U61083
Sequence 2787	U61084
Sequence 2788	U61397
Sequence 2789	U62589
Sequence 2790	U62891
Sequence 2791	U63743
Sequence 2792	U64898
Sequence 2793	U65785
Sequence 2794	U66661
Sequence 2795	U67171
Sequence 2796	U68140
Sequence 2797	U68566
Sequence 2798	U70322
Sequence 2799	U70734
Sequence 2800	U73379
Sequence 2801	U79258
Sequence 2802	U80735
Sequence 2803	U82258
Sequence 2804	U82761
Sequence 2805	U84581
Sequence 2806	U85429

TABLE 8A

Sequence 2807	U86602
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Sequence 2809	U87564
Sequence 2810	U87791
Sequence 2811	U87954
Sequence 2812	U90441
Sequence 2813	U90552
Sequence 2814	U90878
Sequence 2815	U90907
Sequence 2816	U90909
Sequence 2817	U91321
Sequence 2818	U91618
Sequence 2819	U91942
Sequence 2820	U94586
Sequence 2821	U94855
Sequence 2822	U95367
Sequence 2823	U96759
Sequence 2824	U96915
Sequence 2825	U97251
Sequence 2826	V00567
Sequence 2827	V00594
Sequence 2828	X00351
Sequence 2829	X00457
Sequence 2830	X00497
Sequence 2831	X00570
Sequence 2832	X01405
Sequence 2833	X01630
Sequence 2834	X01677
Sequence 2835	X01742
Sequence 2836	X02422
Sequence 2837	X02457
Sequence 2838	X02490
Sequence 2839	X02530
Sequence 2840	X02761
Sequence 2841	X02990
Sequence 2842	X04098
Sequence 2843	X04236
Sequence 2844	X04412
Sequence 2845	X04470
Sequence 2846	X05231
Sequence 2847	X05232
Sequence 2848	X05360
Sequence 2849	X05908
Sequence 2850	X06409
Sequence 2851	X06617
Sequence 2852	X06700
Sequence 2853	X06747
Sequence 2854	X07362
Sequence 2855	X07549
Sequence 2856	X07695
Sequence 2857	X07819
Sequence 2858	X07820
Sequence 2859	X07820
Sequence 2860	X07979
Sequence 2861	X12451
Sequence 2862	X12597
Sequence 2863	X12791
Sequence 2864	X13238
Sequence 2865	X13425
Sequence 2866	X13694
Sequence 2867	X13839
Sequence 2868	X13923
Sequence 2869	X14420
Sequence 2870	X14787
Sequence 2871	X15187
Sequence 2872	X15722
Sequence 2873	X15729
Sequence 2874	X15949
Sequence 2875	X16850
Sequence 2876	X16940
Sequence 2877	X17206
Sequence 2878	X52426
Sequence 2879	X52966
Sequence 2880	X53296
Sequence 2881	X53331
Sequence 2882	X53586
Sequence 2883	X54137
Sequence 2884	X54304
Sequence 2885	X54473
Sequence 2886	X54941
Sequence 2887	X55654
Sequence 2888	X55885
Sequence 2889	X56160
Sequence 2890	X56510
Sequence 2891	X56932
Sequence 2892	X56998
Sequence 2893	X56999
Sequence 2894	X57351
Sequence 2895	X57352
Sequence 2896	X57766
Sequence 2897	X57809
Sequence 2898	X57812
Sequence 2899	X57824
Sequence 2900	X58082
Sequence 2901	X58092
Sequence 2902	X59417
Sequence 2903	X59706
Sequence 2904	X59841
Sequence 2905	X60111
Sequence 2906	X62534
Sequence 2907	X62744
Sequence 2908	X63071
Sequence 2909	X63432
Sequence 2910	X63629

TABLE 8A

Sequence 2911	X64707
Sequence 2912	X64875
Sequence 2913	X65614
Sequence 2914	X65923
Sequence 2915	X67325
Sequence 2916	X67698
Sequence 2917	X67951
Sequence 2918	X69111
Sequence 2919	X69151
Sequence 2920	X70476
Sequence 2921	X71087
Sequence 2922	X72452
Sequence 2923	X72467
Sequence 2924	X72964
Sequence 2925	X73902
Sequence 2926	X74330
Sequence 2927	X75308
Sequence 2928	X75593
Sequence 2929	X75861
Sequence 2930	X77548
Sequence 2931	X78136
Sequence 2932	X78947
Sequence 2933	X79234
Sequence 2934	X80695
Sequence 2935	X81109
Sequence 2936	X81696
Sequence 2937	X81817
Sequence 2938	X82018
Sequence 2939	X84373
Sequence 2940	X84958
Sequence 2941	X85160
Sequence 2942	X85372
Sequence 2943	X85373
Sequence 2944	X85545
Sequence 2945	X87176
Sequence 2946	X87212
Sequence 2947	X87241
Sequence 2948	X87446
Sequence 2949	X87455
Sequence 2950	X87843
Sequence 2951	X89750
Sequence 2952	X91257
Sequence 2953	X94754
Sequence 2954	X95073
Sequence 2955	X95747
Sequence 2956	X95748
Sequence 2957	X95749
Sequence 2958	X96401
Sequence 2959	X97065
Sequence 2960	X97324
Sequence 2961	X98263
Sequence 2962	X99920
Sequence 2963	Y00052
Sequence 2964	Y00282
Sequence 2965	Y00291
Sequence 2966	Y00345
Sequence 2967	Y00503
Sequence 2968	Y08247
Sequence 2969	Y08685
Sequence 2970	Y08982
Sequence 2971	Y09022
Sequence 2972	Y09188
Sequence 2973	Y10351
Sequence 2974	Y11251
Sequence 2975	Y11435
Sequence 2976	Y12653
Sequence 2977	Y12860
Sequence 2978	Y13247
Sequence 2979	Y13936
Sequence 2980	Y14736
Sequence 2981	Y14737
Sequence 2982	Y14738
Sequence 2983	Y16241
Sequence 2984	Y16961
Sequence 2985	Y17392
Sequence 2986	Y17941
Sequence 2987	Y17957
Sequence 2988	Z11773
Sequence 2989	Z11890
Sequence 2990	Z11894
Sequence 2991	Z18325
Sequence 2992	Z22658
Sequence 2993	Z30570
Sequence 2994	Z46347
Sequence 2995	Z46606
Sequence 2996	Z46622
Sequence 2997	Z47087
Sequence 2998	Z47552
Sequence 2999	Z47727
Sequence 3000	Z68926
Sequence 3001	Z68928
Sequence 3002	Z68929
Sequence 3003	Z68940
Sequence 3004	Z69025
Sequence 3005	Z74615
Sequence 3006	Z74616
Sequence 3007	Z75331
Sequence 3008	Z75668
Sequence 3009	N80499
Sequence 3010	Q06061
Sequence 3011	Q11879
Sequence 3012	Q20595
Sequence 3013	Q22419
Sequence 3014	Q31691

TABLE 8A

Sequence 3015	Q44222
Sequence 3016	Q44223
Sequence 3017	Q49943
Sequence 3018	Q58038
Sequence 3019	Q65628
Sequence 3020	Q71872
Sequence 3021	Q74082
Sequence 3022	Q89317
Sequence 3023	T10942
Sequence 3024	T12814
Sequence 3025	T13324
Sequence 3026	T18696
Sequence 3027	T33345
Sequence 3028	T38698
Sequence 3029	T38700
Sequence 3030	T44091
Sequence 3031	T46131
Sequence 3032	T47520
Sequence 3033	T68321
Sequence 3034	T90355
Sequence 3035	V07572
Sequence 3036	V21156
Sequence 3037	V26608
Sequence 3038	V33072
Sequence 3039	V36078
Sequence 3040	V43612
Sequence 3041	V59555
Sequence 3042	V59660
Sequence 3043	V59783
Sequence 3044	V66632
Sequence 3045	V84369
Sequence 3046	V84510
Sequence 3047	V84539
Sequence 3048	V86720
Sequence 3049	V87978
Sequence 3050	V89283
Sequence 3051	V90125
Sequence 3052	X00620
Sequence 3053	X00650
Sequence 3054	X00756
Sequence 3055	X01213
Sequence 3056	X05656
Sequence 3057	X19978
Sequence 3058	X27386
Sequence 3059	X30162
Sequence 3060	X33941
Sequence 3061	X35726
Sequence 3062	X39912
Sequence 3063	X40006
Sequence 3064	X41035
Sequence 3065	X55999
Sequence 3066	X61377
Sequence 3067	V54014

Sequence#	access#
Sequence 3070	AA027091
Sequence 3071	AA044869
Sequence 3072	AA075085
Sequence 3073	AA085810
Sequence 3074	AA088758
Sequence 3075	AA088914
Sequence 3076	AA090857
Sequence 3077	AA091555
Sequence 3078	AA091687
Sequence 3079	AA093071
Sequence 3080	AA101291
Sequence 3081	AA115284
Sequence 3082	AA130652
Sequence 3083	AA134283
Sequence 3084	AA149994
Sequence 3085	AA169418
Sequence 3086	AA169449
Sequence 3087	AA171706
Sequence 3088	AA180124
Sequence 3089	AA180949
Sequence 3090	AA192903
Sequence 3091	AA192935
Sequence 3092	AA205654
Sequence 3093	AA210891
Sequence 3094	AA215363
Sequence 3095	AA216238
Sequence 3096	AA234824
Sequence 3097	AA251758
Sequence 3098	AA282202
Sequence 3099	AA282895
Sequence 3100	AA285258
Sequence 3101	AA299360
Sequence 3102	AA307058
Sequence 3103	AA307449
Sequence 3104	AA310838
Sequence 3105	AA315317
Sequence 3106	AA329754
Sequence 3107	AA334734
Sequence 3108	AA345096
Sequence 3109	AA383177
Sequence 3110	AA417380
Sequence 3111	AA418144
Sequence 3112	AA426048
Sequence 3113	AA429937
Sequence 3114	AA436927
Sequence 3115	AA442206
Sequence 3116	AA446826
Sequence 3117	AA450294

TABLE 8A

Sequence 3118	AA451992
Sequence 3119	AA464824
Sequence 3120	AA467729
Sequence#	access#
Sequence 3121	AA468236
Sequence 3122	AA468308
Sequence 3123	AA469048
Sequence 3124	AA469968
Sequence 3125	AA470051
Sequence 3126	AA501657
Sequence 3127	AA532398
Sequence 3128	AA532664
Sequence 3129	AA548849
Sequence 3130	AA550845
Sequence 3131	AA552974
Sequence 3132	AA565834
Sequence 3133	AA587278
Sequence 3134	AA602257
Sequence 3135	AA614033
Sequence 3136	AA644214
Sequence 3137	AA649507
Sequence 3138	AA659202
Sequence 3139	AA659680
Sequence 3140	AA669329
Sequence 3141	AA680335
Sequence 3142	AA694005
Sequence 3143	AA704064
Sequence 3144	AA713610
Sequence 3145	AA714933
Sequence 3146	AA722437
Sequence 3147	AA723013
Sequence 3148	AA729743
Sequence 3149	AA740372
Sequence 3150	AA744762
Sequence 3151	AA757731
Sequence 3152	AA760715
Sequence 3153	AA779865
Sequence 3154	AA826309
Sequence 3155	AA826906
Sequence 3156	AA827228
Sequence 3157	AA836663
Sequence 3158	AA838112
Sequence 3159	AA838640
Sequence 3160	AA845455
Sequence 3161	AA861951
Sequence 3162	AA862240
Sequence 3163	AA863365
Sequence 3164	AA888290
Sequence 3165	AA890180
Sequence 3166	AI004650
Sequence 3167	AI016477
Sequence 3168	AI018038
Sequence 3169	AI022220
Sequence 3170	AI023341
Sequence 3171	AI041124
Sequence 3172	AI046024
Sequence 3173	AI075033
Sequence 3174	AI078595
Sequence 3175	AI091910
Sequence 3176	AI097642
Sequence 3177	AI128031
Sequence 3178	AI131549
Sequence 3179	AI133393
Sequence 3180	AI186047
Sequence 3181	AI216988
Sequence 3182	AI221783
Sequence 3183	AI222310
Sequence 3184	AI253292
Sequence 3185	AI253300
Sequence 3186	AI253335
Sequence 3187	AI253337
Sequence 3188	AI267182
Sequence 3189	AI267185
Sequence 3190	AI267285
Sequence 3191	AI267414
Sequence 3192	AI267515
Sequence 3193	AI267521
Sequence 3194	AI267664
Sequence 3195	AI267838
Sequence 3196	AI274773
Sequence 3197	AI332952
Sequence 3198	AI343970
Sequence 3199	AI366374
Sequence 3200	AI366376
Sequence 3201	AI366381
Sequence 3202	AI392908
Sequence 3203	AI440063
Sequence 3204	AI491915
Sequence 3205	AI500553
Sequence 3206	AI539641
Sequence 3207	AI571021
Sequence 3208	AI590227
Sequence 3209	AI610369
Sequence 3210	AI652855
Sequence 3211	AI654007
Sequence 3212	AI685608
Sequence 3213	AI744264
Sequence 3214	AI765826
Sequence 3215	AI768688
Sequence 3216	AI769287
Sequence 3217	AI816152
Sequence 3218	AI826456
Sequence 3219	AI857997
Sequence 3220	AI860586

TABLE 8A

Sequence 3221	AI860838
Sequence 3222	AI927678
Sequence 3223	AI935636
Sequence 3224	AI978703
Sequence 3225	AL035835
Sequence 3226	AL038463
Sequence 3227	AL041840
Sequence 3228	AL045504
Sequence 3229	AL120989
Sequence 3230	AW001775
Sequence 3231	AW022287
Sequence 3232	AW023497
Sequence 3233	AW081741
Sequence 3234	AW166315
Sequence 3235	AW188948
Sequence 3236	D55192
Sequence 3237	F13527
Sequence 3238	F30835
Sequence 3239	H01350
Sequence 3240	H60321
Sequence 3241	H79629
Sequence 3242	N27802
Sequence 3243	N49269
Sequence 3244	N77080
Sequence 3245	N92016
Sequence 3246	N92254
Sequence 3247	N95144
Sequence 3248	R14496
Sequence 3249	R23483
Sequence 3250	R24186
Sequence 3251	R31386
Sequence 3252	R54249
Sequence 3253	R70649
Sequence 3254	R70658
Sequence 3255	T06997
Sequence 3256	T65058
Sequence 3257	W01340
Sequence 3258	W04496
Sequence 3259	W21213
Sequence 3260	W78794
Sequence 3261	W84366
Sequence 3262	AW152280
Sequence 3263	AA52114
Sequence 3264	AI862834
Sequence 3265	AW149311
Sequence 3266	AA456265
Sequence 3267	AA081234
Sequence 3268	AI708331
Sequence 3269	AA190773
Sequence 3270	AA836535
Sequence 3271	AB032768
Sequence 3272	AA280577
Sequence 3273	R71151
Sequence 3274	AW105540
Sequence 3275	AA374890
Sequence 3276	H88734
Sequence 3277	AI391187
Sequence 3278	R78971
Sequence 3279	AI267307
Sequence 3280	AI288285
Sequence 3281	AW029294
Sequence 3282	W40516
Sequence 3283	N40679
Sequence 3284	AA410488
Sequence 3285	AI267454
Sequence 3286	AI926208
Sequence 3287	AA173153
Sequence 3288	W45008
Sequence 3289	AI990727
Sequence 3290	AA405362
Sequence 3291	T53990
Sequence 3292	AA831959
Sequence 3293	AA657788
Sequence 3294	AI424788
Sequence 3295	AA172293
Sequence 3296	AI762707
Sequence 3297	AI828592
Sequence 3298	D79190
Sequence 3299	AW044178
Sequence 3300	AI814180
Sequence 3301	AI681916
Sequence 3302	AA280208
Sequence 3303	AI702016
Sequence 3304	AA429937
Sequence 3305	N66777
Sequence 3306	AW265370
Sequence 3307	AA569156
Sequence 3308	AW231122
Sequence 3309	AA332593
Sequence 3310	AB002804
Sequence 3311	AB033026
Sequence 3312	AB033077
Sequence 3313	AC000048
Sequence 3314	AC002456
Sequence 3315	AC004099
Sequence 3316	AC004594
Sequence 3317	AC004664
Sequence 3318	AC004703
Sequence 3319	AC005045
Sequence 3320	AC005180
Sequence 3321	AC005345
Sequence 3322	AC005682
Sequence 3323	AC005919
Sequence 3324	AC006230

TABLE 8A

Sequence 3325	AC007227
Sequence 3326	AC007250
Sequence 3327	AC007392
Sequence 3328	AC007880
Sequence 3329	AC008249
Sequence 3330	AF001893
Sequence 3331	AF044221
Sequence 3332	AF044588
Sequence 3333	AF091627
Sequence 3334	AF103907
Sequence 3335	AF107406
Sequence 3336	AF116910
Sequence 3337	AF127035
Sequence 3338	AF132952
Sequence 3339	AF151843
Sequence 3340	AF176085
Sequence 3341	AL020990
Sequence 3342	AL023577
Sequence 3343	AL023655
Sequence 3344	AL031003
Sequence 3345	AL031296
Sequence 3346	AL031584
Sequence 3347	AL049260
Sequence 3348	AL049694
Sequence 3349	AL049696
Sequence 3350	AL121588
Sequence 3351	AL133044
Sequence 3352	AL133244
Sequence 3353	AP000131
Sequence 3354	AR015927
Sequence 3355	D50525
Sequence 3356	E01972
Sequence 3357	L00160
Sequence 3358	M17254
Sequence 3359	M77830
Sequence 3360	M87790
Sequence 3361	U16850
Sequence 3362	U73522
Sequence 3363	U92018
Sequence 3364	X01111
Sequence 3365	X75185
Sequence 3366	Z83843
Sequence 3367	N81261
Sequence 3368	N81611
Sequence 3369	N90104
Sequence 3370	N90508
Sequence 3371	N91475
Sequence 3372	Q05826
Sequence 3373	Q06061
Sequence 3374	Q12650
Sequence 3375	Q13375
Sequence 3376	Q14635
Sequence 3377	Q24632
Sequence 3378	Q28760
Sequence 3379	Q28985
Sequence 3380	Q31691
Sequence 3381	Q34556
Sequence 3382	Q38525
Sequence 3383	Q40498
Sequence 3384	Q49165
Sequence 3385	Q54829
Sequence 3386	Q60020
Sequence 3387	Q61302
Sequence 3388	Q74061
Sequence 3389	Q77101
Sequence 3390	Q77247
Sequence 3391	Q77538
Sequence 3392	Q79902
Sequence 3393	Q81203
Sequence 3394	Q85979
Sequence 3395	Q89554
Sequence 3396	Q92779
Sequence 3397	Q92783
Sequence 3398	T10557
Sequence 3399	T12940
Sequence 3400	T19018
Sequence 3401	T19291
Sequence 3402	T19594
Sequence 3403	T20087
Sequence 3404	T22211
Sequence 3405	T22417
Sequence 3406	T22418
Sequence 3407	T24395
Sequence 3408	T24606
Sequence 3409	T26540
Sequence 3410	T37405
Sequence 3411	T61896
Sequence 3412	T68321
Sequence 3413	T73614
Sequence 3414	T84472
Sequence 3415	T93627
Sequence 3416	T94055
Sequence 3417	T96832
Sequence 3418	V05164
Sequence 3419	V11504
Sequence 3420	V12306
Sequence 3421	V19375
Sequence 3422	V30100
Sequence 3423	V34697
Sequence 3424	V46464
Sequence 3425	V57926
Sequence 3426	V59692
Sequence 3427	V59797
Sequence 3428	V60015

TABLE 8A

Sequence 3429	V61159
Sequence 3430	V63610
Sequence 3431	V69215
Sequence 3432	X19461
Sequence 3433	X33938
Sequence 3434	X37304
Sequence 3435	X60146
Sequence 3436	X86772
Sequence 3437	X87388
Sequence 3438	X89589
Sequence 3439	X98327
Sequence 3440	X98505
Sequence 3441	X98717
Sequence 3442	X99062
Sequence 3443	Z06248
Sequence 3444	Z06510
Sequence 3445	Z07171
Sequence 3446	Z07193
Sequence 3447	Z09465
Sequence 3448	Z13380
Sequence 3449	Z15844
Sequence 3450	Z16598
Sequence 3451	Z17355
Sequence 3452	Z17621
Sequence 3453	Z20504
Sequence 3454	Z24575
Sequence 3455	Z24588
Sequence 3456	Z24596
Sequence 3457	Z24616
Sequence 3458	Z24636
Sequence 3459	Z24640
Sequence 3460	Z24659
Sequence 3461	Z33597
Sequence 3462	AC36202
Sequence 3463	AC31114
Sequence 3464	AC13432
Sequence 3465	AC33854
Sequence 3466	AC32760
Sequence 3467	AC32771
Sequence 3468	AC13416
Sequence 3469	AC33941
Sequence 3470	AC34873
Sequence 3471	AC35160
Sequence 3472	AC36508
Sequence 3473	AC30406
Sequence 3474	AC34200
Sequence 3475	AC36773
Sequence 3476	AC32135
Sequence 3477	AC26275
Sequence 3478	AC21508
Sequence 3479	AC31199
Sequence 3480	AC36178
Sequence 3481	AC36179
Sequence 3482	AC02680
Sequence 3483	AC36749
Sequence 3484	AC35661
Sequence 3485	AC36062
Sequence 3486	AC34897
Sequence 3487	AC31006
Sequence 3488	AC30669
Sequence 3489	AC34725
Sequence 3490	AC33935
Sequence 3491	AC32730
Sequence 3492	AC33957
Sequence 3493	AC31065
Sequence 3494	AC36286
Sequence 3495	AC28729
Sequence 3496	AC10339
Sequence 3497	AC02589
Sequence 3498	AC35929
Sequence 3499	AC33894
Sequence 3500	AC02817
Sequence 3501	AC36802
Sequence 3502	AC21371
Sequence 3503	AC36110
Sequence 3504	AC36055
Sequence 3505	AC01828
Sequence 3506	AC35877
Sequence 3507	AC30619
Sequence 3508	AC36807
Sequence 3509	AC32761
Sequence 3510	AC37045
Sequence 3511	AC02230
Sequence 3512	AC35798
Sequence 3513	AC35090
Sequence 3514	AC13951
Sequence 3515	AC03061
Sequence 3516	AC28935
Sequence 3517	AC35887
Sequence 3518	AC37174
Sequence 3519	AC36118
Sequence 3520	AC36819
Sequence 3521	AC36073
Sequence 3522	AC29622
Sequence 3523	AC28072
Sequence 3524	AC10379
Sequence 3525	AC31125
Sequence 3526	AC36796
Sequence 3527	AC36141
Sequence 3528	AC36820
Sequence 3529	AC02169
Sequence 3530	AC36187
Sequence 3531	AC28743
Sequence 3532	AC36175

TABLE 8A

Sequence 3533	AC35134
Sequence 3534	AC01776
Sequence 3535	AC36770
Sequence 3536	AC32103
Sequence 3537	AC33030
Sequence 3538	AC33657
Sequence 3539	AC36063
Sequence 3540	AC21667
Sequence 3541	AC36097
Sequence 3542	AC21692
Sequence 3543	AC36789
Sequence 3544	AC03409
Sequence 3545	AC33909
Sequence 3546	AC03570
Sequence 3547	AC33739
Sequence 3548	AC28082
Sequence 3549	AC34683
Sequence 3550	AC32012
Sequence 3551	AC35457
Sequence 3552	AC32121
Sequence 3553	AC33673
Sequence 3554	AC34741
Sequence 3555	AC31535
Sequence 3556	AC00851
Sequence 3557	AC30515
Sequence 3558	AC32124
Sequence 3559	AC01507
Sequence 3560	AC10908
Sequence 3561	AC01497
Sequence 3562	AC31030
Sequence 3563	AC33849
Sequence 3564	AC34193
Sequence 3565	AC27762
Sequence 3566	AC05165
Sequence 3567	AC30683
Sequence 3568	AC34994
Sequence 3569	AC02146
Sequence 3570	AC02821
Sequence 3571	AC35176
Sequence 3572	AC28121
Sequence 3573	AC02729
Sequence 3574	AC32058
Sequence 3575	AC02734
Sequence 3576	AC32778
Sequence 3577	AC05131
Sequence 3578	AC30638
Sequence 3579	AC35166
Sequence 3580	AC34681
Sequence 3581	AC31502
Sequence 3582	AC29270
Sequence 3583	AC03054
Sequence 3584	AC30415

Table 8A-1

Acc Num	GI Nbr
A21185	579591
A21187	579593
AA000998	1437131
AA001222	1437297
AA001227	1437350
AA001431	1437116
AA001449	1436914
AA001536	1437001
AA001567	1437032
AA001611	1445188
AA001749	1445543
AA001815	1445629
AA001835	1445649
AA001870	1445514
AA002125	1445741
AA002132	1445148
AA002258	1445173
AA004489	1448085
AA004632	1448169
AA004638	1448175
AA004648	1448185
AA004664	1448201
AA004671	1448208
AA004689	1448226
AA004806	1448303
AA004832	1448309
AA004975	1448835
AA005063	1447760
AA005087	1447784
AA005124	1447799
AA007419	1463405
AA007515	1463491
AA007581	1463639
AA007588	1463574
AA007606	1463592
AA007619	1463605
AA007623	1463609
AA007641	1463647
AA007663	1463655
AA009433	1470808
AA009455	1470634
AA009608	1470749
AA009627	1470767
AA009755	1470784
AA009763	1470566
AA009770	1470573
AA009773	1470576
AA009809	1470593
AA010065	1471093
AA010079	1471127
AA010158	1471205
AA010188	1471215
AA010250	1471366
AA010305	1471331
AA010351	1471387
AA010421	1471516

Acc Num	GI Nbr
AA010605	1471631
AA010608	1471634
AA010715	1471762
AA010748	1471775
AA010760	1471787
AA010805	1471861
AA010932	1471959
AA010954	1472001
AA011057	1472232
AA011061	1472089
AA011095	1472123
AA011215	1472327
AA011228	1472255
AA011259	1472286
AA011281	1472328
AA011307	1472354
AA011367	1472464
AA011427	1472473
AA011593	1472700
AA011607	1472644
AA011685	1472731
AA012866	1473904
AA012939	1473966
AA013198	1474451
AA013357	1474463
AA015658	1476688
AA015663	1476693
AA015850	1476943
AA015891	1476920
AA015959	1477025
AA016000	1477240
AA016234	1477281
AA016980	1479354
AA017066	1479230
AA017133	1479435
AA017417	1479792
AA017620	1479774
AA017698	1479887
AA018229	1481485
AA018338	1481805
AA018437	1481692
AA018449	1481704
AA018671	1481936
AA018676	1481941
AA018979	1482371
AA019203	1482760
AA019482	1482111
AA019591	1482883
AA019774	1483110
AA020855	1484716
AA020878	1484649
AA020911	1484655
AA021013	1484766
AA021181	1485376
AA021194	1485379
AA021212	1484937

Table 8A-1

Acc Num	GI Nbr
AA021463	1485153
AA022466	1486565
AA022480	1486579
AA022684	1486792
AA022788	1486887
AA022838	1487011
AA022886	1486957
AA022937	1487036
AA023022	1486534
AA024389	1489332
AA024401	1489409
AA024799	1489722
AA024932	1489838
AA024968	1489873
AA025057	1489962
AA025082	1490005
AA025291	1489286
AA025432	1490914
AA025715	1491117
AA025884	1491221
AA025898	1491236
AA026102	1492861
AA026170	1492193
AA026215	1492901
AA026332	1492270
AA026682	1492849
AA027091	1493300
AA027098	1493307
AA027233	1492745
AA027239	1492751
AA027264	1492139
AA028145	1494214
AA028164	1494289
AA028921	1496324
AA029107	1496528
AA029146	1496548
AA029490	1496957
AA029522	1496924
AA029597	1497001
AA029676	1497079
AA029754	1496072
AA029838	1496083
AA029963	1496219
AA030055	1496281
AA031284	1501239
AA031513	1501467
AA031575	1501519
AA031602	1501554
AA031745	1501699
AA031764	1501718
AA032023	1501986
AA032198	1502170
AA032205	1502177
AA032221	1502183
AA033532	1505378
AA033590	1505418

Acc Num	GI Nbr
AA033742	1505560
AA033832	1505650
AA033986	1505795
AA034103	1506108
AA034213	1506023
AA034222	1506050
AA035095	1507341
AA035208	1507389
AA035703	1507531
AA036683	1509731
AA036697	1509745
AA036881	1509973
AA037138	1512246
AA037145	1512253
AA037170	1512330
AA037172	1512332
AA037208	1512387
AA037254	1512397
AA037284	1512409
AA037290	1512434
AA037359	1512597
AA037399	1512498
AA037518	1512683
AA037788	1512915
AA037809	1512927
AA039354	1515650
AA039639	1515917
AA039762	1516041
AA039857	1516135
AA040170	1516466
AA040242	1516518
AA040332	1516663
AA040344	1516621
AA040617	1517030
AA040741	1517019
AA041241	1517475
AA041445	1517670
AA041520	1517773
AA042864	1522380
AA042990	1522505
AA043167	1521021
AA043416	1521291
AA043806	1521719
AA043951	1521876
AA044004	1521862
AA044118	1521976
AA044205	1522062
AA044307	1522183
AA044379	1522392
AA044656	1522859
AA044769	1522990
AA044869	1523073
AA044885	1523089
AA044888	1523092
AA045074	1523555
AA045192	1523394

Table 8A-1

Acc Num	GI Nbr
AA045196	1523398
AA045214	1523479
AA045230	1523434
AA045340	1523542
AA045345	1523566
AA045385	1523634
AA045393	1523595
AA045404	1523606
AA045508	1523744
AA045529	1523765
AA045606	1525351
AA045664	1525595
AA045993	1526096
AA046116	1526009
AA046360	1526289
AA046582	1524498
AA046622	1524520
AA046628	1524526
AA046704	1524601
AA046785	1524683
AA046790	1524688
AA047099	1525016
AA047134	1525033
AA047338	1525236
AA047436	1525482
AA047499	1525545
AA047606	1527459
AA047803	1527482
AA053071	1544228
AA053265	1544475
AA053288	1545747
AA053484	1544122
AA053665	1544592
AA053860	1544812
AA053909	1544834
AA054169	1545092
AA054277	1545202
AA054341	1545266
AA054358	1545302
AA054406	1545332
AA054582	1545525
AA054602	1545590
AA054701	1545625
AA054771	1545707
AA055326	1547729
AA055349	1547687
AA055368	1547706
AA055439	1547777
AA055485	1547824
AA055523	1547862
AA055637	1547976
AA055768	1548168
AA055880	1548218
AA055945	1548284
AA056013	1548352
AA056057	1548451

Table 8A-1

Acc Num	GI Nbr
AA056060	1548454
AA056096	1548433
AA056231	1548568
AA056334	1548691
AA056381	1548721
AA056453	1548793
AA056474	1548832
AA056509	1548849
AA056588	1548928
AA056608	1548948
AA057153	1549612
AA057264	1549902
AA057366	1550033
AA057378	1550017
AA057426	1550067
AA058323	1551160
AA058453	1551263
AA058456	1551282
AA058597	1551404
AA058708	1551516
AA058818	1551628
AA058899	1551725
AA059347	1553294
AA062802	1557162
AA062957	1557458
AA063398	1557267
AA063467	1557478
AA064945	1559209
AA069135	1576494
AA069549	1577041
AA071235	1578638
AA071255	1578610
AA071501	1578872
AA074241	1614127
AA074258	1614180
AA074650	1614528
AA075029	1614899
AA075085	1614971
AA075184	1615054
AA075422	1615351
AA075531	1615401
AA075632	1615502
AA075635	1615505
AA075682	1615748
AA075781	1615653
AA076135	1616003
AA076191	1616061
AA076461	1616391
AA076645	1616545
AA078778	1617653
AA080889	1623378
AA081043	1622978
AA081068	1622986
AA081149	1623065
AA081223	1623071
AA081234	1623215

Acc Num	GI Nbr
AA081355	1623169
AA081600	1623658
AA081711	1623769
AA081795	1623871
AA081817	1623928
AA082142	1624218
AA082241	1624300
AA082304	1624624
AA082314	1624370
AA082348	1624422
AA082499	1624580
AA082523	1624756
AA082572	1624692
AA082747	1624805
AA083032	1625088
AA083207	1625264
AA083228	1625285
AA083345	1625405
AA083645	1625704
AA083740	1625938
AA084560	1626616
AA084984	1627042
AA085104	1627170
AA085319	1627386
AA085435	1628665
AA085512	1628698
AA085538	1628747
AA085759	1629221
AA085810	1629342
AA085824	1629337
AA085872	1629244
AA086333	1628963
AA088177	1633698
AA088197	1633772
AA088326	1633847
AA088359	1633871
AA088457	1633978
AA088544	1634049
AA088564	1634069
AA088655	1634176
AA088740	1634261
AA088758	1634279
AA088779	1634291
AA088783	1634295
AA088914	1633678
AA089897	1636389
AA089985	1636485
AA090106	1636590
AA090243	1636735
AA090264	1636764
AA090857	1635521
AA091050	1635634
AA091398	1636861
AA091496	1636951
AA091555	1638010
AA091687	1638150

Table 8A-1

Acc Num	GI Nbr
AA091771	1638298
AA092002	1637079
AA092185	1637174
AA093071	1638460
AA093842	1639435
AA094496	1640073
AA095065	1640658
AA095443	1641028
AA095962	1641547
AA098867	1645051
AA098929	1644805
AA098997	1645390
AA099033	1645474
AA099083	1644943
AA099169	1645269
AA099236	1645082
AA099251	1645097
AA099262	1645108
AA099288	1645206
AA099515	1645461
AA099522	1645468
AA099554	1645628
AA099568	1645585
AA099631	1645715
AA099819	1645918
AA099910	1646052
AA100037	1646231
AA100168	1646385
AA100340	1646723
AA100440	1646954
AA100531	1648232
AA100612	1646925
AA100657	1646975
AA100671	1647032
AA100738	1647109
AA100799	1647216
AA100852	1647269
AA101173	1647992
AA101243	1647883
AA101291	1648029
AA101296	1648034
AA101561	1648449
AA101562	1648450
AA101861	1645219
AA101919	1645381
AA101964	1645607
AA102591	1647800
AA102646	1647963
AA102670	1648004
AA102738	1648347
AA111855	1663942
AA111856	1663943
AA112172	1664374
AA112288	1664557
AA112748	1663831
AA112936	1664286

Table 8A-1

Acc Num	GI Nbr
AA113788	1667709
AA114086	1667962
AA114226	1668119
AA114879	1669992
AA115076	1670339
AA115244	1670489
AA115284	1670462
AA115310	1670627
AA115336	1670516
AA115399	1670640
AA115558	1670403
AA115592	1670236
AA115716	1670729
AA115838	1670916
AA115983	1671008
AA116004	1671029
AA116060	1671092
AA120794	1677989
AA120880	1678211
AA120962	1678367
AA121249	1678863
AA121266	1678899
AA121428	1679105
AA121581	1679196
AA121632	1679281
AA121743	1679366
AA121753	1679394
AA121778	1679402
AA122021	1678104
AA122237	1678538
AA122269	1678508
AA122272	1678511
AA122401	1678777
AA125790	1687761
AA125792	1687763
AA125915	1687778
AA125917	1687503
AA125927	1685612
AA125988	1685662
AA126115	1685781
AA126195	1687782
AA126259	1687876
AA126493	1686086
AA126599	1687560
AA126755	1686255
AA126817	1686334
AA126821	1686338
AA126911	1686374
AA126951	1686403
AA126958	1686410
AA127058	1687826
AA127075	1687668
AA127116	1686477
AA127221	1687686
AA127419	1686708
AA127783	1687072

Table 8A-1

Acc Num	GI Nbr
AA127805	1687084
AA127962	1687224
AA127965	1687227
AA128508	1689814
AA128518	1688498
AA128607	1690002
AA128743	1688651
AA128984	1688776
AA129170	1688954
AA129223	1689016
AA129310	1689093
AA129312	1689095
AA129552	1689317
AA129783	1689414
AA129861	1689929
AA129932	1689508
AA130016	1690878
AA130028	1690890
AA130141	1691199
AA130221	1691225
AA130262	1691539
AA130347	1691693
AA130522	1691805
AA130541	1692094
AA130547	1692100
AA130596	1692018
AA130626	1692179
AA130652	1692143
AA130827	1692519
AA131231	1692739
AA131299	1692932
AA131315	1692822
AA131358	1692856
AA131421	1692908
AA131506	1692994
AA131526	1693077
AA131673	1693300
AA131707	1693197
AA131908	1693406
AA132065	1693600
AA132090	1693580
AA132195	1693686
AA132250	1693849
AA132330	1693820
AA132580	1694272
AA132677	1694167
AA132889	1694376
AA132987	1694503
AA133194	1689956
AA133212	1689974
AA133273	1690241
AA133277	1690273
AA133375	1690361
AA133547	1690517
AA133692	1690660
AA133721	1690707

Table 8A-1

Acc Num	GI Nbr
AA133778	1690746
AA133796	1690783
AA134036	1691104
AA134283	1691828
AA134576	1695573
AA134595	1695475
AA134813	1695443
AA134862	1695363
AA134871	1695334
AA134919	1696020
AA135504	1697059
AA135695	1696706
AA135748	1696760
AA135813	1696824
AA135914	1697232
AA135919	1697105
AA135929	1696885
AA136155	1697384
AA136442	1697652
AA136447	1697657
AA136532	1697887
AA136707	1697917
AA136750	1697978
AA136756	1697984
AA136796	1698169
AA136964	1698192
AA136983	1698254
AA137000	1698209
AA137109	1698344
AA137144	1698379
AA137266	1696999
AA142842	1712285
AA142865	1712289
AA142869	1712293
AA142923	1712429
AA142952	1712330
AA142966	1712344
AA143201	1712768
AA143286	1712657
AA143471	1712859
AA143726	1713106
AA146968	1716383
AA147032	1716422
AA147361	1716758
AA147454	1716963
AA147523	1717104
AA147552	1716922
AA147654	1717025
AA147833	1717205
AA148199	1717598
AA148508	1721552
AA148548	1721573
AA148573	1721597
AA148793	1721630
AA148915	1719325
AA149065	1719537

Table 8A-1

Acc Num	GI Nbr
AA149082	1719372
AA149309	1719885
AA149360	1718560
AA149415	1719931
AA149509	1720168
AA149640	1720441
AA149842	1721040
AA149854	1720934
AA149882	1721237
AA149968	1721252
AA149994	1721147
AA150161	1721382
AA150263	1721784
AA150298	1721966
AA150301	1721969
AA150416	1721929
AA150487	1722001
AA150505	1722019
AA150507	1722021
AA150638	1722150
AA150662	1722174
AA150665	1722177
AA150918	1722429
AA151002	1722513
AA151003	1722514
AA151210	1719465
AA151214	1719469
AA151244	1719435
AA151486	1719991
AA151775	1720675
AA152165	1721217
AA152204	1721466
AA152258	1721476
AA155695	1727311
AA155787	1727404
AA155913	1727531
AA155942	1727633
AA156235	1727853
AA156356	1728097
AA156632	1728255
AA156674	1728353
AA156782	1728397
AA156784	1728399
AA156793	1728408
AA156801	1728416
AA156901	1728581
AA156964	1728624
AA156982	1728597
AA157089	1728715
AA157150	1728758
AA157266	1728874
AA157472	1729079
AA157632	1729240
AA157743	1729368
AA157889	1732700
AA158169	1732963

Table 8A-1

Acc Num	GI Nbr
AA158217	1733089
AA158258	1733053
AA158345	1733156
AA159015	1733826
AA159259	1734070
AA159272	1734074
AA159356	1734167
AA159552	1735225
AA159654	1734687
AA159669	1741853
AA159688	1741773
AA159826	1734402
AA160484	1735912
AA160606	1736052
AA160812	1736196
AA164582	1740750
AA165051	1740486
AA165313	1740541
AA165410	1741469
AA166739	1745186
AA167113	1745507
AA167129	1745630
AA167223	1745600
AA167381	1745758
AA167654	1744999
AA167814	1744965
AA167817	1744968
AA169154	1747829
AA169159	1747735
AA169340	1747899
AA169392	1748332
AA169418	1748376
AA169449	1748425
AA169487	1748201
AA169547	1747935
AA169564	1747952
AA169645	1748227
AA171463	1750521
AA171510	1750569
AA171706	1750791
AA171899	1750975
AA172293	1751343
AA172370	1751418
AA172400	1751448
AA173042	1754374
AA173153	1754377
AA173184	1754399
AA173381	1753529
AA173408	1753537
AA173610	1753805
AA173657	1753790
AA173910	1754042
AA173948	1754098
AA174008	1754140
AA174102	1754244
AA174106	1754248

Table 8A-1

Acc Num	GI Nbr
AA176220	1757351
AA176483	1757616
AA176764	1757887
AA179554	1760967
AA180100	1761365
AA180124	1761390
AA180262	1761529
AA180949	1764441
AA181023	1764497
AA181085	1764551
AA181201	1764804
AA181314	1764780
AA181413	1764881
AA181455	1764940
AA181580	1765046
AA186399	1774699
AA186406	1774706
AA186426	1774526
AA186477	1774694
AA186485	1774586
AA186939	1775232
AA187014	1775140
AA187030	1775304
AA187073	1775242
AA187379	1773572
AA187405	1773597
AA187428	1773747
AA187505	1773757
AA187610	1773803
AA187719	1773920
AA187875	1774084
AA187933	1774125
AA187966	1774217
AA187971	1774222
AA187982	1774429
AA188063	1774256
AA188162	1773401
AA188203	1774387
AA188256	1775317
AA188527	1775552
AA188591	1775616
AA188761	1775805
AA188789	1775816
AA188921	1776008
AA189000	1776025
AA189106	1776158
AA190587	1779717
AA190629	1779742
AA190747	1779133
AA190764	1779279
AA190773	1779355
AA190789	1779174
AA190941	1779463
AA190993	1779620
AA191071	1779663
AA191422	1780101

Acc Num	GI Nbr
AA191464	1780171
AA191476	1780138
AA191512	1780237
AA191516	1780241
AA192268	1782176
AA192527	1781749
AA192547	1781787
AA192816	1782222
AA192903	1782317
AA192935	1782333
AA193156	1782551
AA193340	1782930
AA193351	1782790
AA193486	1782945
AA194517	1784213
AA194646	1784563
AA194819	1784509
AA194830	1784520
AA194833	1784523
AA194876	1784588
AA194894	1784656
AA194966	1784679
AA194973	1784894
AA195088	1784778
AA195113	1784803
AA195273	1784973
AA195387	1785131
AA195398	1785170
AA195420	1785113
AA195463	1785176
AA195470	1785183
AA195647	1785336
AA195696	1785374
AA195946	1791537
AA195956	1791547
AA196003	1791627
AA196633	1792207
AA196962	1792553
AA197344	1791370
AA199717	1795425
AA199836	1795606
AA199891	1795625
AA203134	1798859
AA203379	1799089
AA203561	1799334
AA205253	1803244
AA205539	1803530
AA205565	1803590
AA205625	1803683
AA205654	1803751
AA205722	1803721
AA205854	1801225
AA205860	1801247
AA206220	1801790
AA206267	1801637
AA206277	1801664

Table 8A-1

Acc Num	GI Nbr
AA206527	1801908
AA206582	1801962
AA206848	1802279
AA206991	1801246
AA207014	1802426
AA207131	1802482
AA207185	1802677
AA207224	1802845
AA207267	1802760
AA209524	1807485
AA209529	1807490
AA209531	1807492
AA210760	1809414
AA210891	1809537
AA211509	1810163
AA211703	1810340
AA213429	1812238
AA213816	1812443
AA214548	1813173
AA214559	1813184
AA215363	1815107
AA215724	1815496
AA216192	1816139
AA216202	1816229
AA216238	1816185
AA216670	1817396
AA218820	1832903
AA219100	1833282
AA220979	1839722
AA221029	1839781
AA223779	1844338
AA223828	1844370
AA224124	1844683
AA224269	1844828
AA225256	1846574
AA225348	1846731
AA225436	1846763
AA225515	1846823
AA225528	1846836
AA225601	1846891
AA225644	1846961
AA226337	1847644
AA226380	1847707
AA226546	1847835
AA226672	1847988
AA226732	1848303
AA227366	1849004
AA227579	1849195
AA227594	1849138
AA228284	1849845
AA228389	1849940
AA228697	1851358
AA228935	1851754
AA229047	1852031
AA229087	1852116
AA229419	1851485

Table 8A-1

Acc Num	GI Nbr
AA229467	1851302
AA229611	1851608
AA229619	1851616
AA229777	1851921
AA229951	1852273
AA230173	1852504
AA232172	1855527
AA232345	1855132
AA232379	1855165
AA232626	1855763
AA232645	1855647
AA232691	1855703
AA232710	1855767
AA233376	1856372
AA233418	1856683
AA233643	1856636
AA233646	1856639
AA233959	1855044
AA234138	1858350
AA234671	1859378
AA234732	1859225
AA234824	1859354
AA234933	1859425
AA234982	1858141
AA235007	1858277
AA235347	1859785
AA235370	1859808
AA235430	1859867
AA235805	1860242
AA236085	1860523
AA236444	1858733
AA236689	1860709
AA236840	1860870
AA242913	1873706
AA243241	1874034
AA243346	1874157
AA243499	1874506
AA243799	1874610
AA243828	1874639
AA243990	1874713
AA244162	1874865
AA244240	1874942
AA244377	1875112
AA248319	1879036
AA248658	1879834
AA248706	1879954
AA248791	1880326
AA249154	1879783
AA249195	1879852
AA249421	1880301
AA250730	1885712
AA251178	1886143
AA251182	1886147
AA251303	1886484
AA251305	1886486
AA251338	1886301

Acc Num	GI Nbr
AA251758	1886720
AA251800	1886780
AA251927	1886888
AA252014	1886975
AA252968	1882695
AA253098	1882805
AA253340	1885440
AA253448	1885749
AA255740	1892678
AA255900	1891592
AA256108	1891647
AA256157	1891696
AA256235	1891774
AA256330	1891867
AA256335	1891872
AA256461	1891999
AA256802	1890949
AA256824	1890970
AA256849	1891078
AA256863	1891019
AA257992	1894424
AA258057	1894489
AA258104	1894629
AA258725	1893849
AA258735	1893896
AA259207	1894659
AA261831	1897664
AA261990	1897971
AA262168	1898579
AA262211	1898482
AA262799	1898425
AA262988	1898699
AA278240	1920180
AA278401	1921645
AA278512	1919850
AA278536	1919921
AA278550	1919871
AA278660	1920136
AA278759	1920287
AA278789	1920110
AA278921	1920387
AA279072	1920537
AA279097	1920562
AA279100	1920583
AA279150	1920616
AA279172	1920655
AA279396	1920879
AA279422	1920887
AA279426	1920891
AA279466	1920949
AA279657	1921131
AA280203	1921878
AA280208	1921883
AA280279	1921953
AA280288	1922026
AA280577	1924687

Table 8A-1

Acc Num	GI Nbr
AA280676	1923381
AA280931	1923818
AA281030	1923710
AA281412	1924091
AA281626	1924305
AA281743	1924423
AA281744	1924424
AA282159	1925240
AA282202	1925182
AA282206	1925122
AA282230	1925146
AA282594	1925510
AA282707	1925759
AA282712	1925638
AA282895	1925810
AA282983	1925916
AA283172	1926106
AA283629	1927767
AA283932	1928212
AA283950	1928248
AA283961	1928304
AA283983	1928265
AA284067	1928348
AA284334	1928614
AA284464	1928771
AA284551	1927480
AA284584	1927495
AA284668	1927579
AA284866	1927608
AA284934	1927678
AA284955	1927636
AA284982	1927663
AA285095	1927849
AA285258	1929568
AA286908	1933933
AA287004	1934208
AA287122	1934147
AA287184	1934218
AA287187	1934221
AA287310	1933155
AA287741	1933440
AA287969	1933985
AA290630	1938892
AA290737	1938594
AA291144	1939316
AA291163	1939150
AA291183	1939170
AA291227	1939205
AA291407	1939403
AA291484	1939505
AA291513	1939491
AA291577	1939554
AA291690	1939795
AA291715	1939694
AA291772	1939940
AA292019	1939996

Acc Num	GI Nbr
AA292031	1940152
AA292047	1940228
AA292153	1940131
AA292191	1940291
AA292226	1940362
AA292283	1940263
AA292676	1940670
AA292823	1941849
AA292871	1941852
AA292993	1940906
AA293286	1941377
AA293300	1941391
AA293515	1941091
AA293570	1941237
AA293727	1941510
AA293782	1941840
AA293784	1941842
AA293819	1941742
AA295093	1947582
AA295311	1947646
AA295396	1947750
AA295786	1948121
AA295797	1948152
AA295804	1948159
AA295941	1948286
AA295996	1948333
AA296074	1948410
AA296582	1948914
AA296640	1948973
AA296775	1949272
AA296846	1949180
AA296871	1949347
AA296929	1949261
AA297323	1949657
AA297327	1949661
AA297328	1949662
AA297432	1949927
AA297883	1950216
AA297886	1950219
AA298050	1950384
AA298085	1950481
AA298282	1950625
AA298447	1950790
AA298576	1950929
AA298593	1950976
AA298648	1951001
AA298773	1951105
AA299067	1951418
AA299360	1951692
AA300065	1952416
AA300491	1952905
AA300651	1953221
AA300711	1953044
AA300732	1953300
AA300994	1953386
AA301062	1953433

Table 8A-1

Acc Num	GI Nbr
AA301343	1953676
AA301676	1954019
AA301789	1954193
AA301863	1954428
AA301864	1954429
AA301910	1954243
AA302028	1954421
AA302457	1954788
AA302473	1954804
AA302919	1955270
AA303085	1955415
AA303709	1956051
AA303796	1956127
AA303950	1956283
AA304028	1956361
AA304043	1956376
AA304730	1957227
AA304935	1957262
AA304961	1957288
AA305331	1957895
AA305417	1957819
AA305494	1958072
AA305997	1958367
AA306079	1958427
AA306146	1958474
AA306232	1958560
AA306486	1958835
AA306488	1959058
AA306620	1958949
AA306734	1959083
AA306863	1959191
AA306883	1959211
AA306887	1959236
AA307058	1959536
AA307070	1959619
AA307449	1959798
AA307700	1960190
AA307818	1960145
AA307875	1960275
AA308049	1960377
AA308215	1960544
AA308274	1960673
AA309002	1961399
AA309928	1962483
AA309929	1962484
AA310030	1962359
AA310320	1962669
AA310838	1963226
AA311023	1963350
AA311139	1963466
AA311227	1963627
AA311701	1964029
AA311869	1964198
AA311896	1964546
AA311905	1964306
AA312513	1964842

Acc Num	GI Nbr
AA312550	1964899
AA312574	1964913
AA313048	1965449
AA313131	1965591
AA313277	1965677
AA313552	1965882
AA313603	1966151
AA313607	1966155
AA313668	1966227
AA313775	1966104
AA313794	1966123
AA314119	1966448
AA314286	1966615
AA314378	1966707
AA314654	1967133
AA314659	1966987
AA314674	1967002
AA314920	1967249
AA315072	1967411
AA315317	1967646
AA315426	1967755
AA315627	1968017
AA316016	1968727
AA316055	1968384
AA316071	1968400
AA316153	1968502
AA316502	1968901
AA317092	1969430
AA317329	1969656
AA317411	1969750
AA317477	1969878
AA317551	1969930
AA317976	1970541
AA318377	1970863
AA318591	1970920
AA318628	1971026
AA318662	1970990
AA318737	1971063
AA319664	1971990
AA319726	1972275
AA319798	1972155
AA321244	1973571
AA322115	1974581
AA322537	1974939
AA322966	1975442
AA326982	1979229
AA327247	1979491
AA327455	1979938
AA327592	1979837
AA328185	1980450
AA328352	1980597
AA328443	1980708
AA329529	1981771
AA329754	1982293
AA329927	1982180
AA332143	1984396

Acc Num	GI Nbr
AA332250	1984737
AA332410	1984675
AA332470	1984714
AA332593	1985086
AA332672	1984936
AA332772	1985172
AA333358	1985601
AA333390	1985633
AA333694	1985938
AA333796	1986050
AA334592	1986909
AA334656	1987070
AA334734	1986988
AA335086	1987349
AA335356	1987600
AA335527	1987770
AA335862	1988104
AA336273	1988522
AA336690	1988929
AA336815	1989124
AA337085	1989384
AA337617	1989854
AA338761	1991019
AA340767	1993006
AA340989	1993226
AA341183	1993419
AA341693	1993950
AA343612	1995851
AA344287	1996523
AA344350	1996588
AA345096	1997343
AA345486	1997722
AA345528	1997838
AA345757	1998004
AA346556	1998791
AA347236	1999472
AA348472	2000708
AA348482	2000718
AA348945	2001417
AA348987	2001223
AA349571	2001840
AA349781	2002101
AA350719	2003036
AA351686	2004005
AA352116	2004607
AA352567	2004887
AA352888	2005208
AA353039	2005592
AA354391	2006895
AA355584	2007977
AA355867	2008186
AA356575	2008895
AA356815	2009359
AA357031	2009350
AA357538	2010010
AA357671	2009990

Table 8A-1

Acc Num	GI Nbr
AA358176	2010494
AA359492	2011809
AA360254	2012612
AA360441	2012759
AA360514	2012904
AA360607	2012927
AA360704	2013024
AA360936	2013256
AA361063	2013403
AA362771	2015111
AA363047	2015365
AA363581	2015901
AA364646	2016963
AA364833	2017150
AA367685	2020003
AA368546	2020875
AA369836	2022197
AA370644	2022984
AA372230	2024568
AA372927	2025483
AA373141	2025461
AA374161	2026541
AA374198	2026517
AA374233	2026582
AA374376	2026715
AA374890	2027360
AA375184	2027503
AA375478	2027798
AA375594	2027934
AA375717	2028037
AA375815	2028133
AA375867	2028257
AA375933	2028282
AA376034	2028354
AA376143	2028463
AA376424	2028814
AA376837	2029384
AA377265	2029583
AA377319	2029658
AA377431	2029750
AA378617	2030936
AA379901	2032221
AA380293	2032681
AA380819	2033140
AA380936	2033327
AA381196	2033516
AA382938	2035256
AA383074	2035412
AA383177	2035569
AA384095	2036434
AA384518	2036868
AA384671	2037020
AA386075	2038391
AA393214	2046183
AA393869	2046874
AA393892	2046879

Table 8A-1

Acc Num	GI Nbr
AA394106	2047094
AA394152	2047285
AA394299	2047294
AA394303	2047298
AA397813	2051021
AA397906	2051185
AA398246	2051355
AA398262	2051371
AA398352	2051461
AA398384	2051556
AA398458	2051629
AA398482	2051592
AA398581	2051708
AA398854	2050872
AA399218	2052971
AA399264	2052999
AA399317	2053054
AA399320	2053057
AA399326	2053063
AA400090	2053910
AA400128	2053930
AA400262	2054142
AA400292	2054172
AA400391	2054324
AA400393	2054326
AA400476	2054347
AA400592	2054523
AA401111	2054986
AA401224	2055113
AA401236	2055125
AA401257	2055164
AA401275	2055207
AA401304	2053547
AA401370	2053578
AA401437	2053645
AA401441	2053649
AA401693	2057177
AA402011	2056852
AA402159	2056124
AA402247	2056885
AA402298	2056211
AA402352	2056264
AA402435	2057299
AA402724	2056480
AA402796	2056549
AA402879	2056633
AA402915	2056651
AA403048	2055610
AA403061	2057004
AA403072	2055616
AA404225	2058967
AA404239	2058981
AA404269	2058993
AA404286	2059010
AA404288	2059012
AA404293	2059017

Table 8A-1

Acc Num	GI Nbr
AA404346	2059071
AA404356	2059081
AA404486	2059228
AA404564	2059306
AA404646	2058943
AA404656	2058843
AA404692	2058871
AA404988	2063198
AA405008	2063218
AA405208	2063567
AA405227	2063586
AA405362	2063617
AA405415	2063652
AA405443	2063380
AA405587	2063152
AA405624	2063170
AA405631	2063123
AA405636	2063128
AA405690	2063691
AA405748	2063732
AA405751	2063735
AA405804	2063787
AA405869	2063853
AA405984	2064090
AA405989	2063972
AA406019	2064002
AA406061	2064044
AA406113	2064229
AA406115	2064231
AA406192	2064218
AA406205	2064186
AA406311	2064295
AA406320	2064321
AA406363	2064346
AA406372	2064355
AA406395	2064396
AA406428	2064413
AA406449	2064434
AA406456	2064441
AA406505	2064488
AA406551	2064544
AA406575	2064568
AA406580	2064573
AA410206	2069167
AA410293	2069254
AA410298	2069259
AA410310	2069271
AA410429	2069535
AA410480	2069648
AA410488	2069656
AA410496	2069602
AA410567	2069673
AA410680	2069803
AA411107	2070221
AA411204	2068754
AA411234	2068775

Table 8A-1

Acc Num	GI Nbr
AA411392	2068924
AA411440	2068972
AA411452	2068984
AA411556	2069291
AA411655	2069318
AA411674	2069337
AA411876	2070448
AA412193	2070781
AA412229	2070799
AA412237	2070807
AA412284	2070855
AA412632	2071211
AA416552	2077513
AA416733	2077668
AA416736	2077671
AA416767	2077721
AA416785	2077739
AA416816	2077775
AA416843	2077802
AA417097	2077178
AA417227	2077308
AA417380	2077461
AA417384	2077465
AA417592	2079402
AA417595	2079405
AA417659	2079478
AA417683	2079502
AA417737	2079601
AA417744	2079545
AA417803	2079587
AA417805	2079589
AA417900	2079700
AA417912	2079731
AA417920	2079739
AA417921	2079740
AA417933	2079752
AA417946	2079765
AA417956	2079775
AA418021	2079850
AA418077	2079878
AA418097	2079898
AA418119	2080002
AA418144	2079945
AA418200	2080019
AA418221	2080040
AA418304	2080132
AA418322	2080151
AA418383	2080230
AA418442	2080289
AA418507	2080306
AA418510	2080419
AA418523	2080332
AA418610	2080402
AA418644	2080463
AA418670	2080489
AA418782	2080592

Table 8A-1

Acc Num	GI Nbr
AA418808	2080609
AA418811	2080612
AA418821	2080622
AA418846	2080665
AA418900	2080719
AA418922	2080751
AA418951	2080761
AA418955	2080765
AA418959	2080769
AA418984	2080803
AA418988	2080807
AA418999	2078744
AA419064	2078870
AA419164	2079053
AA419192	2078903
AA419251	2078964
AA419582	2079301
AA419602	2079356
AA419614	2079341
AA420462	2094340
AA420491	2094397
AA420625	2094503
AA420758	2094637
AA420982	2099923
AA420992	2099825
AA421023	2099910
AA421030	2099917
AA421171	2100126
AA421213	2100038
AA421242	2100205
AA421258	2100083
AA421420	2100245
AA421481	2100306
AA421533	2100358
AA421584	2099909
AA421595	2100437
AA421603	2100601
AA421682	2100499
AA421754	2100571
AA421845	2100804
AA421850	2100809
AA422057	2100890
AA423867	2102846
AA423940	2102910
AA424102	2103063
AA424293	2103263
AA424317	2103287
AA424352	2103339
AA424395	2103356
AA424441	2103411
AA424504	2103465
AA424564	2103534
AA424578	2103548
AA424632	2103638
AA424653	2103606
AA424657	2103610

Table 8A-1

Acc Num	GI Nbr
AA424680	2103624
AA424684	2103628
AA424706	2102756
AA424744	2106876
AA424767	2106890
AA424796	2106964
AA424913	2107018
AA424950	2107038
AA424984	2107137
AA425014	2107083
AA425047	2107116
AA425102	2107172
AA425120	2107347
AA425139	2107410
AA425160	2107471
AA425175	2105967
AA425208	2106000
AA425236	2106010
AA425249	2106023
AA425323	2106097
AA425352	2107221
AA425382	2106165
AA425395	2106196
AA425400	2106156
AA425411	2106229
AA425419	2106175
AA425465	2106319
AA425467	2106321
AA425475	2106241
AA425485	2106224
AA425500	2106257
AA425545	2107457
AA425551	2106344
AA425553	2106346
AA425556	2106296
AA425562	2106302
AA425587	2106361
AA425641	2106379
AA425757	2106477
AA425861	2107623
AA425879	2106507
AA426019	2106543
AA426048	2106536
AA426065	2106553
AA426216	2107619
AA426227	2107760
AA426341	2106631
AA426374	2106646
AA426495	2106767
AA426499	2106744
AA426586	2106842
AA426588	2106844
AA427433	2111406
AA427447	2111370
AA427619	2111452
AA427667	2111484

Table 8A-1

Acc Num	GI Nbr
AA427690	2111531
AA427782	2112362
AA427789	2111605
AA427792	2111608
AA427815	2111650
AA427858	2111656
AA427899	2111679
AA427970	2111724
AA428044	2111754
AA428074	2111767
AA428099	2111776
AA428117	2111786
AA428136	2111813
AA428229	2110130
AA428240	2111859
AA428250	2112222
AA428341	2110206
AA428418	2112232
AA428421	2112235
AA428454	2112469
AA428455	2112470
AA428836	2110414
AA429076	2110662
AA429171	2110697
AA429307	2111920
AA429326	2110833
AA429422	2111942
AA429937	2113146
AA429944	2113243
AA429945	2113244
AA429980	2113155
AA429989	2113164
AA430010	2113320
AA430032	2113206
AA430040	2113214
AA430092	2113329
AA430093	2113330
AA430172	2113345
AA430205	2113378
AA430241	2113442
AA430351	2110926
AA430497	2111087
AA430504	2111094
AA430540	2111115
AA430552	2111127
AA430573	2111132
AA430575	2111134
AA430639	2111212
AA430665	2111221
AA430675	2111248
AA430687	2112245
AA431201	2114909
AA431210	2114918
AA431408	2115116
AA431438	2115146
AA431734	2115442

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Acc Num	GI Nbr
AA431741	2115449
AA431749	2115457
AA431773	2115481
AA431796	2115504
AA431817	2115525
AA431868	2115576
AA431967	2115675
AA431986	2115694
AA432030	2115738
AA432062	2115770
AA432074	2115782
AA432075	2115783
AA432100	2115808
AA432108	2115816
AA433818	2138732
AA433968	2138882
AA434088	2139002
AA434090	2139004
AA434144	2139058
AA434160	2139074
AA434402	2139316
AA434420	2139334
AA434454	2139368
AA434487	2139401
AA434497	2139411
AA434502	2139416
AA434558	2139472
AA435877	2140791
AA435948	2140862
AA435950	2140864
AA436031	2140945
AA436097	2141011
AA436128	2141042
AA436158	2141072
AA436233	2141147
AA436269	2141183
AA436290	2141204
AA436325	2141239
AA436384	2141298
AA436456	2141370
AA436479	2141393
AA436574	2141488
AA436595	2141509
AA436611	2141525
AA436738	2141652
AA436927	2141841
AA436943	2141857
AA437090	2142004
AA437093	2142007
AA437124	2142038
AA437355	2142269
AA437370	2142284
AA442043	2153921
AA442174	2154052
AA442206	2154084
AA442287	2154165

Table 8A-1

Acc Num	GI Nbr
AA442290	2154168
AA442352	2154230
AA442370	2154248
AA442692	2154570
AA442695	2154573
AA442853	2155528
AA442936	2155611
AA442976	2155651
AA443004	2155679
AA443039	2155714
AA443063	2155738
AA443286	2155961
AA443429	2156104
AA443602	2156277
AA443690	2156365
AA443702	2156377
AA443853	2156528
AA443903	2156578
AA443920	2156595
AA443936	2156611
AA443971	2156646
AA444020	2156695
AA444066	2156741
AA444071	2156746
AA444129	2156804
AA444386	2157051
AA446016	2158681
AA446344	2159009
AA446428	2159093
AA446505	2159170
AA446675	2159340
AA446682	2159347
AA446716	2159381
AA446782	2159447
AA446792	2159457
AA446819	2159484
AA446826	2159491
AA446881	2159546
AA446885	2159550
AA446901	2159566
AA446907	2159572
AA446979	2159644
AA446980	2159645
AA447018	2159683
AA447027	2159692
AA447232	2159897
AA447453	2161123
AA447459	2161129
AA447486	2161156
AA447502	2161172
AA447503	2161173
AA447504	2161174
AA447522	2161192
AA447525	2161195
AA447574	2161244
AA447610	2161280

Table 8A-1

Acc Num	GI Nbr
AA447679	2161349
AA447688	2161358
AA447729	2161399
AA447773	2161443
AA447780	2161450
AA447781	2161451
AA447782	2161452
AA447797	2161467
AA447798	2161468
AA447810	2161480
AA447835	2161505
AA447896	2161566
AA447947	2161617
AA447948	2161618
AA448015	2161685
AA448033	2161703
AA448074	2161744
AA448110	2161780
AA448126	2161796
AA448140	2161810
AA448157	2161827
AA448161	2161831
AA448257	2161927
AA448270	2161940
AA448277	2161947
AA448289	2161959
AA448400	2162070
AA448402	2162072
AA448464	2162134
AA448526	2162196
AA448599	2162269
AA448615	2162285
AA448646	2162316
AA448664	2162334
AA448729	2162399
AA448735	2162405
AA448755	2162425
AA448760	2162430
AA448761	2162431
AA448967	2162987
AA449008	2163028
AA449037	2163057
AA449038	2163058
AA449054	2163074
AA449067	2163087
AA449120	2163140
AA449289	2162752
AA449332	2163181
AA449334	2163183
AA449336	2163185
AA449357	2163206
AA449394	2162785
AA449419	2162810
AA449429	2162820
AA449459	2162850
AA449481	2163231

Table 8A-1

Acc Num	GI Nbr
AA449490	2163240
AA449516	2163266
AA449530	2163280
AA449590	2163340
AA449593	2163343
AA449621	2163371
AA449688	2163438
AA449703	2163453
AA449742	2163492
AA449821	2163571
AA449862	2163612
AA450009	2163759
AA450189	2163939
AA450227	2163977
AA450264	2164014
AA450294	2164044
AA450333	2162878
AA450336	2162881
AA450350	2162895
AA451609	2165278
AA451633	2165302
AA451767	2165436
AA451811	2165480
AA451817	2165486
AA451851	2165520
AA451886	2165555
AA451888	2165557
AA451892	2165561
AA451895	2165564
AA451903	2165572
AA451904	2165573
AA451969	2165638
AA451978	2165647
AA451992	2165661
AA452058	2165727
AA452060	2165729
AA452091	2165760
AA452193	2165862
AA452250	2165919
AA452256	2165925
AA452278	2165947
AA452317	2165986
AA452336	2166005
AA452345	2166014
AA452346	2166015
AA452348	2166017
AA452357	2166026
AA452371	2166040
AA452404	2166073
AA452497	2166166
AA452566	2166235
AA452627	2166296
AA452652	2166321
AA452752	2166421
AA452802	2166471
AA452822	2166491

Acc Num	GI Nbr
AA452824	2166493
AA452955	2166624
AA452963	2166632
AA452966	2166635
AA452968	2166637
AA453015	2166684
AA453027	2166696
AA453028	2166697
AA453032	2166701
AA453105	2166774
AA453176	2166845
AA453181	2166850
AA453287	2166956
AA453293	2166962
AA453335	2167004
AA453341	2167010
AA453347	2167016
AA453359	2167028
AA453418	2167087
AA453435	2167104
AA453477	2167146
AA453478	2167147
AA453495	2167164
AA453527	2167196
AA453577	2167246
AA453675	2167344
AA453677	2167346
AA453694	2167363
AA453712	2167381
AA453728	2167397
AA453730	2167399
AA453755	2167424
AA453774	2167443
AA453790	2167459
AA453816	2167485
AA453823	2167492
AA453832	2167501
AA453839	2167508
AA453859	2167528
AA453863	2167532
AA453872	2167541
AA453916	2167585
AA453942	2167611
AA453982	2167651
AA453999	2167668
AA454004	2167673
AA454008	2167677
AA454016	2167685
AA454033	2167702
AA454080	2167749
AA454098	2167767
AA454149	2167818
AA454174	2167843
AA454227	2167896
AA454566	2177342
AA454579	2177355

Table 8A-1

Acc Num	GI Nbr
AA454611	2177387
AA454668	2177444
AA454753	2177529
AA454776	2177552
AA454820	2177596
AA454862	2177638
AA454879	2177655
AA454880	2177656
AA454921	2177697
AA454932	2177708
AA454949	2177725
AA454978	2177754
AA454989	2177765
AA455010	2177786
AA455013	2177789
AA455040	2177816
AA455042	2177818
AA455043	2177819
AA455087	2177863
AA455133	2177909
AA455150	2177926
AA455163	2177939
AA455164	2177940
AA455168	2177944
AA455210	2177986
AA455222	2177998
AA455235	2178011
AA455262	2178038
AA455280	2178056
AA455382	2178158
AA455396	2178172
AA455496	2178272
AA455510	2178286
AA455519	2178295
AA455554	2178330
AA455566	2178342
AA455585	2178361
AA455588	2178364
AA455597	2178373
AA455644	2178420
AA455693	2178469
AA455706	2178482
AA455846	2178622
AA455878	2178654
AA455944	2178720
AA455969	2178745
AA455973	2178749
AA455976	2178752
AA455984	2178760
AA456001	2178777
AA456014	2178790
AA456023	2178799
AA456035	2178811
AA456062	2178838
AA456077	2178853
AA456109	2178885

Table 8A-1

Acc Num	GI Nbr
AA456161	2179371
AA456184	2179394
AA456192	2179402
AA456254	2179464
AA456265	2179475
AA456271	2179481
AA456289	2179499
AA456303	2179513
AA456321	2179531
AA456325	2179535
AA456370	2178946
AA456376	2178952
AA456394	2178970
AA456400	2178976
AA456403	2178979
AA456437	2179013
AA456446	2179022
AA456454	2179030
AA456455	2179031
AA456510	2179086
AA456585	2179161
AA456608	2179184
AA456616	2179192
AA456664	2179240
AA456778	2177199
AA456818	2179538
AA456821	2179541
AA456833	2179553
AA456878	2179598
AA456886	2179606
AA457042	2179762
AA457051	2179771
AA457082	2179802
AA457092	2179812
AA457108	2179828
AA457118	2179838
AA457138	2179858
AA457152	2179872
AA457247	2179967
AA457501	2180221
AA457728	2180448
AA458491	2183398
AA458501	2183408
AA458502	2183409
AA458503	2183410
AA458509	2183416
AA458516	2183423
AA458528	2183435
AA458549	2183456
AA458551	2183458
AA458578	2183485
AA458622	2183529
AA458627	2183534
AA458637	2183544
AA458653	2183560
AA458801	2183708

Table 8A-1

Acc Num	GI Nbr
AA458838	2183745
AA458884	2183791
AA458943	2183850
AA458994	2183901
AA458996	2183903
AA459045	2183952
AA459100	2184007
AA459106	2184013
AA459132	2184039
AA459148	2184055
AA459180	2184087
AA459227	2184134
AA459282	2184189
AA459292	2184199
AA459368	2184275
AA459393	2184300
AA459410	2184317
AA459491	2184398
AA459507	2184414
AA459542	2184449
AA459614	2184521
AA459621	2184528
AA459627	2184534
AA459632	2184539
AA459645	2184552
AA459663	2184570
AA459702	2184609
AA459727	2184634
AA459743	2184650
AA459880	2184787
AA460012	2184896
AA460074	2184958
AA460078	2184962
AA460115	2185500
AA460149	2185534
AA460239	2185055
AA460254	2185070
AA460258	2185074
AA460299	2185115
AA460310	2185126
AA460369	2185582
AA460432	2185178
AA460438	2185184
AA460480	2185226
AA460514	2185634
AA460520	2185640
AA460529	2185649
AA460651	2185771
AA460669	2185789
AA460732	2185852
AA460805	2185925
AA460831	2185951
AA460838	2185958
AA460847	2185967
AA460859	2185979
AA460872	2185992

Table 8A-1

Acc Num	GI Nbr
AA460893	2186013
AA460900	2186020
AA460946	2186066
AA460957	2186077
AA460963	2186083
AA461084	2186204
AA461092	2186212
AA461120	2186240
AA461132	2186252
AA461136	2186256
AA461254	2186374
AA461304	2186424
AA461390	2185254
AA461403	2185267
AA461456	2185320
AA461460	2185324
AA461467	2185331
AA461486	2185350
AA461492	2185356
AA461509	2185373
AA461574	2185438
AA461576	2185440
AA461583	2185447
AA461616	2185480
AA463220	2188104
AA463224	2188108
AA463248	2188132
AA463275	2188159
AA463323	2188207
AA463446	2188330
AA463453	2188337
AA463454	2188338
AA463458	2188342
AA463460	2188344
AA463463	2188347
AA463492	2188376
AA463498	2188382
AA463568	2188452
AA463625	2188509
AA463661	2188545
AA463788	2188672
AA463789	2188673
AA463793	2188677
AA463797	2188681
AA463830	2188714
AA463837	2188721
AA463964	2188848
AA464018	2188902
AA464062	2188946
AA464095	2188979
AA464147	2189031
AA464152	2189036
AA464210	2189094
AA464236	2189120
AA464237	2189121
AA464305	2189189

Table 8A-1

Acc Num	GI Nbr
AA464329	2189213
AA464342	2189226
AA464354	2189238
AA464358	2189242
AA464529	2189413
AA464542	2189426
AA464557	2189441
AA464568	2189452
AA464569	2189453
AA464593	2189477
AA464595	2189479
AA464601	2189485
AA464612	2189496
AA464622	2189506
AA464623	2189507
AA464630	2189514
AA464688	2189572
AA464689	2189573
AA464691	2189575
AA464700	2189584
AA464704	2189588
AA464708	2189592
AA464710	2189594
AA464711	2189595
AA464729	2189613
AA464824	2189708
AA465049	2189933
AA465148	2191315
AA465228	2191395
AA465256	2191423
AA465258	2191425
AA465269	2191436
AA465286	2191453
AA465374	2191541
AA465424	2191591
AA465444	2191611
AA465541	2191708
AA465546	2191713
AA465593	2191760
AA465598	2191765
AA465616	2191783
AA465654	2191821
AA465720	2191242
AA465723	2191245
AA467729	2194263
AA467769	2194303
AA468236	2194770
AA468308	2194842
AA469048	2195582
AA469166	2195700
AA469207	2195741
AA469968	2197277
AA470003	2197312
AA470051	2197360
AA471017	2198326
AA471246	2199103

Table 8A-1

Acc Num	GI Nbr
AA476234	2204445
AA476240	2204451
AA476253	2204464
AA476272	2204483
AA476285	2204496
AA476438	2204649
AA476460	2204671
AA476494	2204705
AA476576	2204787
AA476585	2204796
AA476604	2204815
AA476961	2205172
AA477008	2205219
AA477044	2205255
AA477065	2205276
AA477082	2205766
AA477165	2205849
AA477297	2205931
AA477428	2206062
AA477628	2206262
AA478043	2206677
AA478258	2206892
AA478268	2206902
AA478279	2206913
AA478331	2206965
AA478473	2207107
AA478481	2207115
AA478524	2207158
AA478542	2207176
AA478585	2207219
AA478645	2207279
AA478659	2207293
AA478670	2207304
AA478717	2207351
AA478719	2207353
AA478721	2207355
AA478747	2207381
AA478812	2207446
AA478866	2207500
AA478875	2207509
AA478880	2207514
AA478982	2205345
AA479063	2207619
AA479243	2207799
AA479259	2207815
AA479272	2207828
AA479276	2207832
AA479284	2207840
AA479308	2207864
AA479351	2207907
AA479398	2207954
AA479402	2207958
AA479453	2208009
AA479503	2208059
AA479566	2205452
AA479646	2205532

Table 8A-1

Acc Num	GI Nbr
AA479795	2205681
AA479857	2205743
AA479906	2204388
AA479913	2204395
AA479920	2204402
AA479954	2208105
AA479978	2208129
AA479997	2208148
AA480012	2208163
AA480529	2208680
AA480828	2210380
AA480830	2210382
AA480844	2210396
AA480851	2210403
AA480880	2210432
AA480979	2210531
AA480994	2210546
AA481052	2210604
AA481058	2210610
AA481069	2210621
AA481076	2210628
AA481100	2210652
AA481177	2210729
AA481269	2210821
AA481283	2210835
AA481349	2210901
AA481397	2210949
AA481438	2210990
AA481464	2211016
AA481540	2211092
AA481578	2211130
AA481597	2211149
AA481618	2211170
AA481718	2211270
AA481759	2211311
AA481927	2209605
AA481944	2209622
AA482110	2209788
AA482117	2209795
AA482294	2209972
AA482377	2210055
AA482741	2211586
AA482855	2211700
AA483460	2212273
AA484409	2213222
AA485036	2214255
AA485080	2214299
AA485141	2214360
AA485303	2214522
AA485310	2214529
AA485449	2214668
AA485453	2214672
AA485454	2214673
AA485458	2214677
AA485467	2214686
AA485495	2214714

Table 8A-1

Acc Num	GI Nbr
AA485512	2214731
AA485528	2214747
AA485608	2214827
AA485609	2214828
AA485648	2214867
AA485677	2214896
AA485734	2214953
AA485773	2214992
AA485810	2215029
AA485853	2215072
AA485877	2215096
AA485896	2215115
AA485913	2216137
AA485983	2216199
AA486001	2216217
AA486017	2216233
AA486041	2216257
AA486055	2216271
AA486085	2216301
AA486138	2216354
AA486175	2216391
AA486195	2216411
AA486207	2216423
AA486230	2216446
AA486261	2216477
AA486283	2216499
AA486300	2216516
AA486312	2216528
AA486362	2215168
AA486367	2215173
AA486375	2216539
AA486379	2216543
AA486402	2216566
AA486407	2216571
AA486455	2216619
AA486460	2216624
AA486471	2216635
AA486538	2216702
AA486612	2216776
AA486728	2216892
AA486731	2216895
AA486746	2216910
AA486747	2216911
AA486796	2216960
AA486805	2216969
AA486827	2216991
AA486838	2217002
AA486849	2217013
AA487121	2217285
AA487191	2217355
AA487202	2217366
AA487213	2217377
AA487215	2217379
AA487218	2217382
AA487252	2217416
AA487480	2217644

Table 8A-1

Acc Num	GI Nbr
AA487483	2217647
AA487552	2217716
AA487557	2217721
AA487560	2217724
AA487608	2217772
AA487632	2217796
AA487634	2217798
AA487637	2217801
AA487651	2217815
AA487674	2217838
AA487767	2215198
AA487797	2215228
AA487812	2215243
AA487845	2215276
AA488070	2215501
AA488181	2215612
AA488185	2215616
AA488230	2215661
AA488238	2215669
AA488289	2215720
AA488297	2215728
AA488340	2215771
AA488413	2215844
AA488460	2215891
AA488466	2215897
AA488517	2215948
AA488721	2218323
AA488735	2218337
AA488765	2218367
AA488797	2218399
AA488825	2218427
AA488884	2218486
AA488885	2218487
AA488889	2218491
AA488898	2218500
AA488970	2218572
AA489000	2218602
AA489007	2218609
AA489023	2218625
AA489080	2218682
AA489111	2218713
AA489138	2218740
AA489199	2218801
AA489200	2218802
AA489232	2218834
AA489261	2218863
AA489265	2218867
AA489297	2218899
AA489309	2218911
AA489311	2218913
AA489343	2218945
AA489606	2219208
AA489608	2219210
AA489611	2219213
AA489636	2219238
AA489648	2219250

Table 8A-1

Acc Num	GI Nbr
AA489664	2219266
AA489696	2219298
AA489699	2219301
AA489707	2219309
AA489738	2219340
AA489743	2219345
AA489847	2220722
AA489904	2220779
AA489944	2220819
AA490172	2221047
AA490192	2219374
AA490232	2219414
AA490263	2219436
AA490267	2219440
AA490352	2219525
AA490388	2219561
AA490463	2219636
AA490483	2219656
AA490486	2219659
AA490494	2219667
AA490509	2219682
AA490521	2219694
AA490547	2219720
AA490561	2219734
AA490609	2219782
AA490611	2219784
AA490617	2219790
AA490627	2219800
AA490635	2219808
AA490673	2219846
AA490680	2219853
AA490684	2219857
AA490731	2219904
AA490798	2219971
AA490805	2219978
AA490825	2219998
AA490846	2220019
AA490900	2220073
AA490903	2220076
AA490911	2220084
AA490959	2220132
AA490985	2220158
AA490989	2220162
AA491191	2220364
AA491208	2220381
AA491247	2220420
AA491256	2220429
AA491271	2220444
AA491292	2220465
AA491395	2220568
AA492143	2221705
AA492272	2221834
AA493138	2222979
AA493532	2223373
AA494295	2224082
AA495734	2229055

Table 8A-1

Acc Num	GI Nbr
AA495790	2229111
AA495804	2229125
AA495818	2229139
AA495819	2229140
AA495859	2229180
AA495893	2229214
AA495898	2229219
AA495904	2229225
AA495935	2229256
AA496058	2229379
AA496083	2229404
AA496085	2229406
AA496087	2229408
AA496097	2229418
AA496105	2229426
AA496133	2229454
AA496329	2229650
AA496373	2229694
AA496409	2229730
AA496628	2229949
AA496650	2229971
AA496664	2229985
AA496784	2230105
AA496792	2230113
AA496801	2230122
AA496836	2230157
AA496949	2230270
AA496993	2230314
AA496999	2230320
AA497002	2230323
AA497093	2230414
AA497109	2230430
AA497111	2230432
AA497119	2230440
AA497122	2230443
AA497123	2230444
AA501657	2236624
AA502292	2237259
AA502836	2237803
AA503078	2238045
AA503208	2238175
AA503607	2238574
AA503870	2238837
AA504095	2240255
AA504120	2240280
AA504128	2240288
AA504204	2240364
AA504232	2240392
AA504239	2240399
AA504262	2240422
AA504265	2240425
AA504266	2240426
AA504272	2240432
AA504283	2240443
AA504327	2240487
AA504351	2240511

Table 8A-1

Acc Num	GI Nbr
AA504354	2240514
AA504389	2240549
AA504492	2240652
AA504556	2240716
AA504590	2240750
AA504631	2240791
AA504707	2240867
AA504719	2240879
AA504752	2240912
AA504798	2240958
AA504832	2240992
AA504844	2241004
AA505063	2241223
AA505117	2241277
AA505150	2241310
AA505162	2241322
AA505615	2241752
AA505632	2241769
AA507382	2243821
AA507394	2243833
AA507405	2243844
AA507626	2244065
AA507911	2244350
AA508736	2246239
AA512975	2251398
AA513783	2252204
AA513848	2252269
AA513869	2252290
AA515132	2254732
AA520999	2261542
AA521015	2261558
AA521093	2261636
AA521103	2261646
AA521247	2261790
AA521249	2261792
AA521292	2261835
AA521297	2261840
AA521300	2261843
AA521327	2261870
AA521346	2261889
AA521348	2261891
AA521370	2261913
AA521384	2261927
AA521394	2261937
AA521411	2261954
AA521439	2261982
AA522693	2263405
AA523094	2263806
AA523399	2264111
AA524064	2264992
AA524726	2265654
AA525031	2265959
AA525960	2268029
AA526745	2268814
AA527072	2269141
AA527216	2269285

Table 8A-1

Acc Num	GI Nbr
AA527293	2269362
AA528173	2270242
AA532398	2276652
AA532501	2276755
AA532664	2276918
AA532734	2278310
AA532956	2277052
AA533037	2277133
AA533146	2277242
AA533283	2277379
AA533770	2277786
AA534231	2278247
AA534645	2278898
AA534826	2279079
AA534842	2279095
AA535621	2279874
AA536175	2280428
AA545745	2307024
AA545771	2307050
AA548849	2319131
AA548870	2319152
AA548889	2319171
AA550845	2321097
AA551344	2321596
AA551391	2321643
AA552077	2322329
AA552449	2322703
AA552974	2323228
AA553751	2324290
AA554373	2324912
AA554506	2325045
AA554630	2325169
AA554914	2325453
AA557264	2327741
AA557575	2328052
AA558585	2329062
AA558670	2329147
AA564555	2336194
AA564604	2336243
AA565099	2336738
AA565334	2336973
AA565499	2337138
AA565834	2337473
AA568922	2341976
AA569156	2342210
AA573737	2348252
AA573959	2348474
AA576764	2354238
AA577071	2354545
AA577613	2355087
AA581035	2358807
AA581425	2359197
AA582006	2360684
AA582588	2359948
AA582853	2360213
AA582855	2360215

Table 8A-1

Acc Num	GI Nbr
AA584921	2367701
AA585327	2385215
AA585440	2385328
AA586687	2397501
AA587278	2398092
AA587379	2398193
AA587754	2401929
AA588189	2401364
AA588729	2402460
AA593834	2408512
AA593864	2408542
AA595238	2410588
AA595471	2410821
AA595937	2411283
AA598470	2432053
AA598487	2432070
AA598505	2432088
AA598508	2432091
AA598515	2432098
AA598526	2432109
AA598533	2432116
AA598538	2432121
AA598561	2432144
AA598567	2432150
AA598582	2432165
AA598601	2432184
AA598615	2432198
AA598621	2432204
AA598635	2432218
AA598640	2432223
AA598652	2432235
AA598653	2432236
AA598668	2432251
AA598758	2432430
AA598776	2432448
AA598794	2432466
AA598796	2432468
AA598817	2432489
AA598887	2432559
AA598918	2432590
AA598970	2432269
AA598974	2432273
AA598982	2432022
AA598996	2432036
AA599068	2432693
AA599092	2432717
AA599094	2432719
AA599120	2432745
AA599187	2432812
AA599251	2432876
AA599311	2432936
AA599495	2433120
AA599574	2433199
AA599717	2433342
AA599768	2433393
AA599857	2433482

Table 8A-1

Acc Num	GI Nbr
AA600192	2433817
AA600214	2433839
AA600217	2433842
AA600853	2434478
AA601946	2436099
AA601970	2435759
AA602217	2436195
AA602257	2436235
AA604210	2445119
AA608514	2456942
AA608555	2456983
AA608556	2456984
AA608558	2456986
AA608730	2457158
AA608852	2457280
AA608856	2457284
AA608870	2457298
AA608923	2457351
AA609161	2457589
AA609189	2457617
AA609216	2457644
AA609284	2457712
AA609363	2457791
AA609364	2457792
AA609365	2457793
AA609454	2457882
AA609556	2457984
AA609783	2458211
AA609904	2458332
AA610000	2458428
AA610016	2458444
AA610476	2458904
AA612632	2464829
AA612919	2463957
AA613803	2466494
AA613834	2465968
AA613908	2466042
AA614033	2466167
AA614529	2466725
AA614729	2466925
AA617655	2504860
AA618477	2505682
AA618549	2505754
AA620407	2524346
AA620415	2524354
AA620477	2524416
AA620485	2524424
AA620528	2524467
AA620591	2524530
AA620597	2524536
AA620608	2524547
AA620609	2524548
AA620611	2524550
AA620669	2524608
AA620709	2524648
AA620757	2524696

Table 8A-1

Acc Num	GI Nbr
AA620783	2524722
AA620862	2524801
AA620995	2524934
AA621031	2524970
AA621132	2525071
AA621184	2525123
AA621202	2525141
AA621291	2525230
AA621339	2525278
AA621478	2525417
AA621725	2525664
AA621761	2524189
AA622011	2525887
AA625387	2537772
AA625487	2537874
AA625567	2537954
AA625628	2538015
AA625634	2538021
AA625651	2538038
AA625653	2538040
AA625662	2538049
AA625666	2538053
AA625765	2538152
AA625788	2538175
AA625922	2538309
AA625977	2538364
AA625991	2538378
AA625995	2538382
AA626024	2538411
AA626178	2538565
AA626240	2538627
AA626255	2538642
AA626507	2538894
AA626698	2539085
AA626845	2539232
AA627554	2539649
AA627916	2540482
AA628230	2540617
AA628232	2540619
AA628462	2540849
AA629189	2541576
AA629262	2541649
AA629357	2541744
AA629692	2552303
AA629862	2552473
AA630017	2552628
AA630084	2552695
AA630104	2552715
AA630449	2553060
AA630628	2553239
AA630734	2553345
AA630771	2553382
AA630800	2553411
AA631152	2553763
AA633433	2555293
AA633549	2556763

Table 8A-1

Acc Num	GI Nbr
AA633556	2556770
AA633577	2556791
AA633658	2556872
AA633747	2556961
AA633901	2557115
AA633954	2557168
AA633993	2557207
AA634006	2557220
AA634028	2557242
AA634103	2557317
AA634109	2557323
AA634175	2557389
AA634360	2557574
AA634371	2557585
AA634427	2557641
AA634434	2557648
AA634876	2558090
AA640687	2565937
AA640827	2566077
AA641959	2567177
AA643026	2568244
AA643416	2568634
AA643835	2569053
AA643953	2569171
AA644088	2569306
AA644128	2569346
AA644211	2569429
AA644214	2569432
AA644448	2569666
AA644657	2569875
AA648474	2574903
AA648790	2575219
AA649507	2576835
AA653775	2589929
AA654660	2590814
AA654827	2590981
AA654953	2591107
AA654959	2591113
AA657788	2593942
AA658330	2594484
AA658374	2594528
AA658821	2594975
AA659162	2595316
AA659202	2595356
AA659680	2595834
AA662538	2616629
AA663188	2617179
AA663941	2617932
AA663981	2617972
AA663983	2617974
AA663986	2617977
AA664004	2617995
AA664040	2618031
AA664067	2618058
AA664101	2618092
AA664179	2618170

Acc Num	GI Nbr
AA664195	2618186
AA664406	2618397
AA666348	2620961
AA668301	2629800
AA668470	2629969
AA668531	2630030
AA668928	2630427
AA669136	2630635
AA669329	2630828
AA669359	2630858
AA669526	2631025
AA669536	2631035
AA669758	2631257
AA669832	2631331
AA669952	2631451
AA670200	2631699
AA670330	2631829
AA670355	2631854
AA670357	2631856
AA670408	2631907
AA676225	2656747
AA676458	2656980
AA676460	2656982
AA676466	2656988
AA676470	2656992
AA676590	2657112
AA676625	2657147
AA676840	2657362
AA676955	2657477
AA676957	2657479
AA676961	2657483
AA676970	2657492
AA676998	2657520
AA677016	2657538
AA677025	2657547
AA677070	2657592
AA677077	2657599
AA677183	2657705
AA677200	2657722
AA677300	2657822
AA677317	2657839
AA677403	2657925
AA677504	2658026
AA677534	2658056
AA677687	2658209
AA677706	2658228
AA677784	2658306
AA677863	2658385
AA677870	2658392
AA677924	2658446
AA677947	2658469
AA678009	2658531
AA678021	2658543
AA678024	2658546
AA678065	2658587
AA678072	2658594

Table 8A-1

Acc Num	GI Nbr
AA678092	2658614
AA678160	2658682
AA678176	2658698
AA678178	2658700
AA678388	2658910
AA678829	2659351
AA679000	2659522
AA679177	2659699
AA679286	2659808
AA679314	2659836
AA679352	2659874
AA679565	2660087
AA679602	2660124
AA679801	2660323
AA680052	2656519
AA680070	2656537
AA680186	2656653
AA680244	2656212
AA680335	2656303
AA682244	2669376
AA682321	2669638
AA682381	2669662
AA682386	2669667
AA682399	2669680
AA682514	2669795
AA682521	2669802
AA682545	2669826
AA682599	2669880
AA682624	2669905
AA682626	2669907
AA682642	2669923
AA682779	2669462
AA682780	2669463
AA682848	2669531
AA682851	2669534
AA682910	2668801
AA683050	2668941
AA683077	2668968
AA683085	2668976
AA683117	2669008
AA683520	2670118
AA683568	2670166
AA683578	2670176
AA683581	2670179
AA687426	2675617
AA694005	2694943
AA699390	2702584
AA699427	2702621
AA699496	2703652
AA699644	2703791
AA699770	2702733
AA699878	2702841
AA699908	2702871
AA700005	2702968
AA700048	2703011
AA700054	2703017

Acc Num	GI Nbr
AA700322	2703285
AA700556	2703519
AA700736	2703901
AA700758	2703923
AA700764	2703929
AA700832	2703997
AA700838	2704003
AA700859	2704024
AA700876	2704041
AA700879	2704044
AA700904	2704069
AA700997	2704162
AA701242	2704407
AA701351	2704516
AA701353	2704518
AA701379	2704544
AA701455	2704620
AA701457	2704622
AA701545	2704710
AA701640	2704805
AA701652	2704817
AA701655	2704820
AA701860	2704973
AA701863	2704976
AA701978	2705091
AA701981	2705094
AA701996	2705109
AA702185	2705298
AA702304	2705417
AA702567	2705680
AA702639	2705752
AA702740	2705853
AA702758	2705871
AA702781	2705894
AA702973	2706086
AA703141	2706254
AA703216	2706329
AA703250	2706363
AA703384	2713302
AA703392	2713310
AA703449	2713367
AA703460	2713378
AA703496	2713414
AA703779	2713697
AA704064	2713982
AA704230	2714148
AA704323	2714241
AA704330	2714248
AA704370	2714288
AA704401	2714319
AA704421	2714339
AA704448	2714366
AA704483	2714401
AA704524	2714442
AA704615	2714533
AA704965	2714883

Table 8A-1

Acc Num	GI Nbr
AA705077	2714995
AA705112	2715030
AA705225	2715143
AA705237	2715155
AA705423	2715341
AA705686	2715604
AA705692	2715610
AA706022	2715940
AA706226	2716144
AA706344	2716262
AA706577	2716495
AA706901	2716819
AA706968	2716886
AA706974	2716892
AA707004	2716922
AA707086	2717004
AA707185	2717103
AA707199	2717117
AA707321	2717239
AA707550	2717468
AA707633	2717551
AA707650	2717568
AA707659	2717577
AA707661	2717579
AA707847	2717765
AA707853	2717771
AA708161	2718079
AA708301	2718219
AA708317	2718235
AA708329	2718247
AA708440	2718358
AA708508	2718426
AA708798	2718716
AA708916	2718834
AA709036	2718954
AA709044	2718962
AA709092	2719010
AA709124	2719042
AA709305	2719223
AA709410	2719328
AA709414	2719332
AA713610	2725884
AA714933	2727207
AA716710	2728984
AA718910	2732009
AA719354	2732453
AA719764	2732863
AA719844	2732943
AA719940	2733039
AA721611	2737746
AA722437	2740144
AA723013	2740720
AA724380	2742087
AA725561	2743268
AA729088	2750447
AA729743	2751102

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Acc Num	GI Nbr
AA730776	2751980
AA731867	2752678
AA732587	2753194
AA732811	2754170
AA732812	2754171
AA732873	2754232
AA732917	2754276
AA732983	2754342
AA733003	2754362
AA733022	2754381
AA733038	2775295
AA733040	2754399
AA733100	2754459
AA733195	2754554
AA733203	2754562
AA737128	2767403
AA738004	2768761
AA738240	2768997
AA740372	2778964
AA740727	2779319
AA740952	2779544
AA741408	2780000
AA743800	2784616
AA744762	2783526
AA747442	2787400
AA748435	2788393
AA757170	2805033
AA757351	2805214
AA757417	2805280
AA757464	2805327
AA757608	2805471
AA757674	2805537
AA757731	2805594
AA757732	2805595
AA757932	2805795
AA758257	2806120
AA758349	2806212
AA758429	2806292
AA759046	2806909
AA760715	2809645
AA764736	2815974
AA765775	2817013
AA767648	2818663
AA767779	2818794
AA768667	2819975
AA768847	2820085
AA769168	2820406
AA769195	2820433
AA769595	2820833
AA770613	2821851
AA772816	2825658
AA773083	2824654
AA773335	2824906
AA773398	2824969
AA773856	2825427
AA774247	2825545

Table 8A-1

Acc Num	GI Nbr
AA774638	2833972
AA774665	2833999
AA774843	2834177
AA774876	2834210
AA775030	2834364
AA775241	2834575
AA775257	2834591
AA775259	2834593
AA775270	2834604
AA775290	2834624
AA775355	2834689
AA775378	2834712
AA775397	2834731
AA775415	2834749
AA775423	2834757
AA775431	2834765
AA775447	2834781
AA775616	2834950
AA775721	2835055
AA775738	2835072
AA775763	2835097
AA775828	2835162
AA775831	2835165
AA775839	2835173
AA775857	2835191
AA775865	2835199
AA775872	2835206
AA775987	2835321
AA776087	2835421
AA776294	2835628
AA776794	2836128
AA776942	2836273
AA777002	2836333
AA777014	2836345
AA777102	2836433
AA777187	2836518
AA777192	2836523
AA777384	2836715
AA777435	2836766
AA777477	2836808
AA777488	2836967
AA777493	2836972
AA777605	2837084
AA777915	2837316
AA777917	2837318
AA777928	2837329
AA778098	2837499
AA778560	2837891
AA778561	2837892
AA778645	2837976
AA778675	2838006
AA778771	2838102
AA778874	2838205
AA779165	2838496
AA779217	2838548
AA779401	2838732

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Acc Num	GI Nbr
AA779480	2838811
AA779865	2839196
AA779892	2839223
AA779949	2839280
AA781074	2840405
AA781207	2840538
AA782337	2841668
AA782679	2842010
AA788641	2848761
AA788738	2848858
AA788970	2849090
AA804750	2876105
AA806060	2874810
AA806294	2875044
AA806371	2875121
AA807586	2873440
AA808946	2878352
AA809199	2878605
AA809396	2878802
AA810675	2880286
AA812236	2881847
AA814719	2884315
AA815407	2885003
AA825931	2899243
AA826294	2899606
AA826309	2899621
AA826906	2900903
AA827228	2901225
AA827350	2899791
AA829295	2902394
AA831659	2904758
AA831959	2905058
AA833773	2908541
AA834301	2907900
AA835460	2909188
AA835885	2910204
AA836535	2910854
AA836663	2909921
AA837819	2913476
AA838112	2913769
AA838640	2913439
AA838670	2914782
AA838691	2914803
AA843176	2929694
AA843404	2929922
AA843407	2929925
AA844124	2930575
AA844447	2930898
AA844864	2931315
AA845178	2931629
AA845432	2933191
AA845455	2933214
AA846308	2932448
AA846523	2932663
AA846735	2932875
AA846794	2932934

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Acc Num	GI Nbr
AA847557	2934075
AA852328	2940921
AA852527	2941120
AA856556	2944858
AA857015	2945317
AA857093	2945395
AA857101	2945403
AA857163	2945465
AA857212	2945514
AA857437	2945739
AA857478	2945780
AA857496	2945798
AA857716	2946018
AA857735	2946037
AA861590	2953730
AA861631	2953771
AA861951	2954430
AA862240	2954719
AA862371	2954850
AA862434	2954913
AA862813	2955292
AA863086	2955565
AA863149	2955628
AA863314	2955793
AA863365	2955844
AA863383	2955862
AA863469	2955948
AA864226	2958539
AA864479	2958792
AA864524	2958837
AA864704	2959017
AA865437	2957713
AA865450	2957726
AA865469	2957745
AA865729	2958005
AA865878	2958154
AA866113	2958389
AA866160	2958436
AA868008	2963453
AA868929	2964374
AA872010	2968048
AA872057	2968235
AA872323	2968501
AA872336	2968514
AA872402	2968580
AA872420	2968598
AA872436	2968614
AA872817	2968939
AA873056	2969178
AA873060	2969182
AA873159	2969281
AA873355	2969477
AA873459	2969581
AA873564	2969686
AA873578	2969700
AA873604	2969726

Acc Num	GI Nbr
AA875893	2985252
AA875933	2985292
AA876021	2984862
AA876039	2984802
AA877166	2986243
AA877255	2986332
AA877479	2986444
AA877618	2986583
AA877815	2986780
AA878048	2987013
AA878391	2987356
AA878880	2987845
AA878899	2987864
AA878933	2987898
AA883400	2992930
AA884545	2994075
AA884622	2994152
AA884886	2994867
AA884897	2994878
AA885210	2994287
AA885311	2994388
AA885433	2994510
AA886322	3001430
AA887673	3003348
AA887751	3003426
AA888148	3003823
AA888182	3003857
AA888290	3003965
AA890136	3017015
AA890180	3017059
AA890663	3017542
AA894557	3030958
AA894577	3030978
AA894627	3031028
AA894687	3031088
AA894927	3031328
AA902264	3037454
AA903708	3038831
AA904239	3039362
AA904362	3039485
AA905314	3040437
AA905491	3040614
AA907403	3042863
AA908982	3048387
AA909144	3048549
AA910100	3049390
AA911900	3051292
AA912466	3051858
AA912796	3052188
AA916325	3055717
AA916413	3055805
AA916420	3055812
AA917350	3057240
AA918023	3057913
AA919102	3058992
AA921913	3069222

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Acc Num	GI Nbr
AA922029	3069338
AA922376	3069685
AA922691	3070000
AA922700	3070009
AA928656	3076947
AA932598	3087379
AA933048	3086981
AA933074	3087007
AA934755	3091967
AA935727	3092884
AA936768	3094802
AA936783	3094817
AA936799	3094833
AA937108	3095219
AA937381	3095492
AA946908	3110303
AA947751	3109004
AA948058	3109311
AA948207	3109460
AA953714	3116632
AA954443	3118138
AA962240	3134404
AA968896	3144076
AA969601	3144781
AA970732	3146022
AA972350	3147640
AA972355	3147645
AA973461	3148641
AA974971	3150763
AA975786	3151578
AA976525	3150551
AA976655	3154101
AA983252	3161777
AA983267	3161792
AA985228	3163753
AA987866	3173230
AA988136	3173500
AA989185	3173807
AA989355	3174719
AA991239	3177728
AA992138	3178252
AA992486	3179242
AA992596	3179352
AA992733	3178467
AA994106	3180651
AA994689	3181178
AA994997	3181486
AA995086	3181575
AA999712	3190267
AA999953	3190508
AB000220	3426162
AB000450	1827451
AB001636	2696612
AB002330	2224604
AB002357	2224658
AB002382	2224708

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Acc Num	GI Nbr
AB002804	1944184
AB004066	2308996
AB004304	4176417
AB004852	3702686
AB005548	4514402
AB006651	3201570
AB006679	2342476
AB006746	3510296
AB007191	8698842
AB007878	2887410
AB007885	2887424
AB007892	2887434
AB007916	6683704
AB007949	3413921
AB008109	2554613
AB009282	2662290
AB009284	2723392
AB010710	2828355
AB011079	2897815
AB011100	6683714
AB011159	3043697
AB011164	3043707
AB011169	3043717
AB011173	3043725
AB011181	6683718
AB011472	4519430
AB012190	3599671
AB012910	3721650
AB013924	3885359
AB014542	3327097
AB014543	3327099
AB014571	3327155
AB014577	3327167
AB014587	3327187
AB014598	3327209
AB014599	3327211
AB015051	3868937
AB015234	3721857
AB015907	4218063
AB017019	4512256
AB018080	3978556
AB018320	3882274
AB018331	3882296
AB018334	3882302
AB019392	4587122
AB019563	3885366
AB019565	3885368
AB019568	3885371
AB020637	4240148
AB020662	4240198
AB020665	4240204
AB020680	4240234
AB020692	4240258
AB020981	4996287
AB021288	4038732
AB021654	4062862

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Acc Num	GI Nbr
AB022651	5360668
AB022653	5360672
AB022654	5360674
AB022656	5360678
AB023137	4589471
AB023146	4589489
AB023209	4589627
AB023224	4589657
AB023229	4589673
AB024313	5138987
AB026722	5931599
AB028624	5103045
AB029000	5689490
AB029005	5689500
AB032768	6009185
AB033026	6330406
AB033077	6330867
AC000048	5882760
AC000386	2431612
AC002456	2337874
AC004099	3650064
AC004381	2982169
AC004594	3063516
AC004616	3264544
AC004664	4210503
AC004699	3138892
AC004703	3228509
AC005045	4508117
AC005180	3687281
AC005193	5306310
AC005345	3927814
AC005682	5757537
AC005919	3892083
AC006230	4966389
AC006322	4454515
AC006960	4337211
AC007227	6456148
AC007250	5836191
AC007392	5523809
AC007880	5931460
AC008249	6137875
AF000148	3243081
AF000152	2454301
AF000381	2565195
AF000670	3153911
AF001862	2232149
AF001893	2529723
AF001945	2959642
AF002715	2352276
AF003521	2197066
AF003594	2196781
AF005654	2337951
AF006088	2282041
AF006259	2804673
AF006305	2213931
AF007217	2253416

Table 8A-1

Acc Num	GI Nbr
AF007217	2253416
AF011920	3176754
AF013759	3153208
AF015041	4102706
AF015283	2384720
AF015767	2353176
AF015926	3220018
AF016266	2529562
AF016371	2708308
AF017257	2736086
AF017418	2394309
AF017688	2435451
AF019214	2460168
AF019225	2425057
AF020043	3089367
AF020351	2655052
AF022229	2809382
AF022913	2558890
AF023259	3746337
AF025438	2815603
AF025998	2570851
AF026292	2559009
AF026381	3169769
AF026692	2920803
AF026939	2612967
AF027158	2623584
AF027292	2599384
AF027302	2522533
AF028832	3287488
AF029669	2909800
AF029914	2605948
AF030234	2822459
AF031385	2606093
AF031647	2688988
AF032456	3004908
AF033095	2645728
AF034176	2707738
AF034607	4426566
AF035034	5921620
AF035286	2661038
AF035289	2661043
AF035304	2661064
AF035309	2661070
AF035313	2661075
AF035320	2661084
AF035360	2827993
AF035582	2661105
AF035784	2665845
AF035811	2665833
AF035933	2992633
AF036331	3647229
AF037448	3037012
AF038404	2707904
AF038952	3329373
AF039701	3170201
AF042166	3298596

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Acc Num	GI Nbr
AF042331	3882901
AF043294	6970210
AF044221	4105251
AF044333	2832295
AF044588	2865520
AF044955	4164443
AF044956	5326827
AF045229	2906029
AF045941	3893854
AF046001	2895869
AF047181	2909853
AF047433	3335505
AF047472	2921872
AF047473	3378103
AF049140	2947300
AF049672	3372500
AF049688	2970525
AF049910	3435156
AF050638	5326819
AF051099	4321592
AF052093	3360399
AF052094	3360400
AF052124	3360431
AF052578	2967847
AF053233	2996191
AF053304	2981230
AF053641	3560556
AF054175	3341993
AF054186	3342007
AF054284	4033734
AF054663	3023148
AF054838	2997740
AF054990	3005703
AF055015	3005739
AF055028	3005757
AF055033	3005763
AF056717	3046994
AF057160	3694919
AF058392	3063679
AF059611	3309572
AF060228	3777528
AF060567	3108088
AF061737	4335938
AF061741	3450827
AF062165	3170792
AF062346	3643808
AF063308	4106355
AF063613	4731860
AF064092	3142636
AF065388	3152700
AF067168	4894369
AF068235	4321975
AF068836	3192908
AF069601	7239697
AF069668	3603309
AF069765	3243032

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Acc Num	GI Nbr
AF069904	3288824
AF070523	3764088
AF070555	3387920
AF070556	3387921
AF070561	3387928
AF070562	3387930
AF070596	3387973
AF070609	3387991
AF070626	3283892
AF070649	3283923
AF070650	4454675
AF070657	4454689
AF070659	4454693
AF070661	4454697
AF070664	4454703
AF070669	4454713
AF070672	3978239
AF070674	3978243
AF071594	3249714
AF072810	4049921
AF075242	4377992
AF075587	3319325
AF075601	5441949
AF077030	4689107
AF077042	4689131
AF077043	4689133
AF077045	4689137
AF077200	4679013
AF077202	4679017
AF077207	4679027
AF077367	3820534
AF078845	5531804
AF078848	5531810
AF078850	5531814
AF078855	5531824
AF078858	5531830
AF078862	5531838
AF078863	5531840
AF079566	4574148
AF081192	3420798
AF081282	4336324
AF082888	3894400
AF083248	5106790
AF083441	5813822
AF084457	5257006
AF085359	5114052
AF085360	5114054
AF086002	3483347
AF086003	3483348
AF086116	3483461
AF086120	3483465
AF086161	3483506
AF086183	3483528
AF086205	3483550
AF086322	3483667
AF086330	3483675

Table 8A-1

Acc Num	GI Nbr
AF086336	3483681
AF086408	3483753
AF086446	3483791
AF086484	3483829
AF086545	3483890
AF086904	3982839
AF091076	3859989
AF091263	4140646
AF091627	3644039
AF093535	5114106
AF095288	3766237
AF095289	3766239
AF097725	4323032
AF097874	4323040
AF100737	4406206
AF100741	5138992
AF100756	5410297
AF101051	4323580
AF102826	4191555
AF103415	4323893
AF103436	4378201
AF103559	4323959
AF103564	4323969
AF103572	4323985
AF103907	6165973
AF107406	5531905
AF109196	4588523
AF110647	5730483
AF111713	5326796
AF113887	4768676
AF114263	4768672
AF115345	4583306
AF116910	4768837
AF121856	4689251
AF124440	4877758
AF125182	4325214
AF125507	4337055
AF127035	5726288
AF127918	4761562
AF131739	4406550
AF131791	4406619
AF131802	4406633
AF131848	4406690
AF131856	4406702
AF132952	4680674
AF132959	4680688
AF138300	5532410
AF144103	5059165
AF144755	5006628
AF145316	4929324
AF146018	5639829
AF147331	4761682
AF147336	4761687
AF147367	4761718
AF147410	4761761
AF147412	4761763

Table 8A-1

Acc Num	GI Nbr
AF151807	4929566
AF151826	4929604
AF151840	4929632
AF151843	4929638
AF151868	4929688
AF151896	4929744
AF151905	4929762
AF151908	4929768
AF152097	4929772
AF153201	5020361
AF153608	5231140
AF153609	5231142
AF156965	5731112
AF158255	5702305
AF168956	5702387
AF172398	5731338
AF176085	6492335
AF176642	6935100
AF179212	5802960
AF182292	5919152
AI000271	3190825
AI004415	3213925
AI004650	3214160
AI004915	3214425
AI004930	3214440
AI005330	3214840
AI014649	3229030
AI015589	3229925
AI016477	3230813
AI016688	3231024
AI017240	3231576
AI017778	3232114
AI018038	3232374
AI018321	3232840
AI018613	3233132
AI022220	3239573
AI023265	3238506
AI023341	3239747
AI025120	3240733
AI025259	3240872
AI026819	3246307
AI026942	3244458
AI027161	3244677
AI027465	3244981
AI027887	3246586
AI028127	3245436
AI028295	3245604
AI028512	3245821
AI031682	3249894
AI031950	3250162
AI033304	3254257
AI033712	3254665
AI037879	3277073
AI039087	3278281
AI039609	3278803
AI040048	3279242

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Acc Num	GI Nbr
AI041067	3280261
AI041124	3280318
AI041309	3280503
AI046024	3293876
AI051245	3306779
AI051775	3307309
AI052525	3308516
AI053702	3321489
AI056411	3330277
AI057064	3330853
AI075033	3401677
AI075172	3401763
AI075782	3404960
AI077905	3412313
AI077939	3412347
AI078595	3413003
AI079233	3415484
AI079730	3415981
AI079874	3416125
AI080476	3416727
AI081540	3418332
AI084459	3422882
AI085948	3424371
AI086608	3425031
AI086797	3425220
AI087367	3425790
AI087805	3426838
AI088809	3427868
AI089452	3428511
AI089794	3428853
AI090240	3429299
AI090872	3429931
AI090889	3429948
AI091910	3430969
AI093207	3432183
AI094099	3433075
AI097213	3446795
AI097642	3445900
AI123672	3539438
AI126345	3594859
AI126722	3595236
AI127013	3595527
AI127441	3595955
AI127556	3596070
AI127879	3596393
AI128031	3596545
AI129664	3598178
AI131218	3601234
AI131549	3601565
AI133393	6360709
AI139036	3645008
AI139802	3645774
AI140455	3647912
AI140804	3648261
AI140806	3648263
AI141893	3649350

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Acc Num	GI Nbr
AI142105	3649562
AI142138	3649595
AI142384	3658743
AI142427	3658786
AI143147	3664956
AI143203	3665012
AI143806	3665615
AI147899	3675581
AI148251	3675933
AI167324	3700494
AI184475	3735113
AI184787	3735425
AI184894	3735532
AI185064	3735702
AI185641	3736279
AI186047	3736685
AI186139	3736777
AI187822	3739031
AI188333	3739542
AI188956	3740165
AI189381	3740590
AI189386	3740595
AI192724	3743933
AI192979	3744188
AI194068	3745277
AI198824	3751430
AI199897	3752503
AI202683	3755289
AI203647	3756253
AI205584	3764256
AI207168	3765840
AI207324	3765996
AI214206	3777807
AI215107	3778708
AI216969	3789623
AI216973	3789627
AI216978	3789632
AI216986	3789640
AI216988	3789642
AI217003	3789657
AI219585	3801788
AI220569	3802772
AI221783	3803986
AI222310	3804513
AI225126	3807839
AI241236	3836633
AI241597	3836994
AI247571	3842968
AI248817	3844214
AI251337	3847866
AI251743	3848272
AI252283	3848812
AI252627	3849156
AI253288	3850409
AI253292	3850413
AI253300	3850421

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Acc Num	GI Nbr
AI253330	3850451
AI253335	3850456
AI253336	3850457
AI253337	3850458
AI253347	3850468
AI253379	3850500
AI253388	3850509
AI253436	3850391
AI265770	3883928
AI267162	3886329
AI267182	3886349
AI267185	3886352
AI267254	3886421
AI267282	3886449
AI267285	3886452
AI267289	3886456
AI267307	3886474
AI267316	3886483
AI267351	3886518
AI267379	3886546
AI267414	3886581
AI267454	3886621
AI267515	3886682
AI267521	3886688
AI267532	3886699
AI267658	3886825
AI267664	3886831
AI267838	3887005
AI268345	3887512
AI268430	3887597
AI268550	3887717
AI270350	3889517
AI274773	3897047
AI275175	3897449
AI275379	3897653
AI277995	3900263
AI279790	3918024
AI280125	3918358
AI280830	3919063
AI281395	3919628
AI281815	3920048
AI284792	3923025
AI285111	3923344
AI288285	3930965
AI291206	3933969
AI291282	3934056
AI291800	3934574
AI298000	3957398
AI298334	3958070
AI298496	3958232
AI299124	3958778
AI299928	3959274
AI300852	3960198
AI300947	3960293
AI301329	3960675
AI304857	3988546

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Acc Num	GI Nbr
AI305745	3990636
AI306478	3989549
AI307515	4002240
AI307557	4002282
AI307569	4002294
AI309334	4004205
AI312092	4017697
AI312353	4017958
AI332560	4069119
AI332952	4069511
AI334450	4071377
AI335426	4072353
AI336224	4073151
AI338972	4075899
AI340510	4077437
AI340563	4077490
AI340653	4077580
AI341138	4078065
AI342937	4080143
AI343764	4080970
AI343970	4081176
AI344026	4081232
AI344101	4081307
AI345143	4082349
AI345608	4082814
AI346017	4083223
AI346994	4084200
AI347602	4084808
AI349166	4086372
AI349430	4086636
AI349698	4086904
AI352510	4089716
AI352575	4089781
AI355149	4095302
AI357416	4109037
AI357472	4109093
AI357921	4109542
AI359254	4110875
AI366015	4125704
AI366015	4125704
AI366374	4126063
AI366376	4126065
AI366376	4126065
AI366381	4126070
AI367288	4137033
AI368587	4147340
AI369186	4147939
AI372834	4152700
AI375712	4175702
AI375712	4175702
AI375834	4175824
AI376003	4175993
AI376003	4175993
AI376751	4186604
AI376825	4186678
AI379830	4189683

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Acc Num	GI Nbr
AI391187	4217194
AI392908	4222455
AI392912	4222459
AI399801	4242888
AI401777	4244864
AI418469	4264400
AI418993	4264924
AI419347	4265278
AI419877	4265808
AI420543	4266474
AI421720	4267651
AI424788	4270719
AI431290	4302151
AI431318	4302347
AI432942	4285705
AI433157	4287209
AI434250	4294864
AI435429	4303120
AI435548	4303956
AI439408	4304113
AI439702	4306170
AI440063	4308534
AI453252	4309058
AI453689	4283919
AI457107	4309976
AI458677	4311256
AI469754	4331844
AI470208	4332298
AI470686	4332776
AI479200	4372368
AI479476	4372644
AI479992	4373160
AI491915	4392918
AI493269	4394272
AI493487	4394490
AI499245	4391227
AI500553	4392535
AI521639	4435774
AI523444	4437579
AI525843	4439978
AI537494	4451629
AI537716	4451851
AI538918	4453053
AI539641	4453776
AI547125	4464613
AI557059	4489422
AI559274	4509479
AI559516	4509721
AI559586	4509791
AI565043	4523500
AI566084	4524536
AI568741	4532115
AI569519	4532893
AI570510	4533884
AI571021	4534395
AI571186	4534560

Acc Num	GI Nbr
AI572613	4535987
AI572752	4536126
AI572852	4536226
AI573140	4536514
AI581958	4567855
AI584139	4570036
AI589040	4598088
AI589993	4599041
AI590227	4599275
AI590244	4599292
AI590981	4600029
AI608975	4618142
AI610369	4619536
AI611676	4620843
AI612885	4622052
AI623627	4648558
AI624249	4649180
AI624515	4649446
AI625736	4650667
AI627852	4664652
AI628312	4665112
AI630330	4681660
AI630389	4681719
AI631515	4682845
AI632471	4683801
AI632536	4683866
AI632544	4683874
AI632869	4684199
AI635718	4687048
AI636308	4687638
AI638172	4690406
AI651114	4735093
AI651336	4735315
AI652855	4736834
AI654007	4737986
AI668664	4827972
AI668694	4828002
AI673251	4852982
AI674170	4874650
AI676122	4876602
AI676178	4876658
AI677829	4888011
AI678023	4888205
AI681916	4892098
AI681953	4892135
AI683193	4893375
AI683431	4893613
AI684170	4895464
AI685608	4896902
AI686949	4898243
AI689321	4900615
AI690344	4901651
AI690721	4902023
AI692191	4969531
AI692405	4969756
AI692703	4970043

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Acc Num	GI Nbr
AI693146	4970486
AI693922	4971262
AI694064	4971404
AI694087	4971427
AI695403	4983303
AI697049	4984949
AI698120	4986020
AI698989	4986889
AI701122	4989022
AI702016	4989916
AI707589	4997365
AI708331	4998107
AI708983	4998759
AI718099	5035430
AI718421	5035677
AI719420	5036676
AI721164	5038420
AI732618	5053731
AI732637	5053750
AI732747	5053860
AI732783	5053896
AI734101	5055214
AI734197	5055310
AI734238	5055351
AI738828	5100809
AI738971	5100952
AI740459	5108747
AI740534	5108822
AI740662	5108950
AI742461	5110749
AI744264	5112552
AI749547	5127811
AI750332	5128596
AI750669	5128933
AI750682	5128946
AI750879	5129143
AI751017	5129369
AI751046	5129398
AI751428	5129692
AI752253	5130517
AI752254	5130518
AI752913	5131177
AI752957	5131221
AI752958	5131222
AI753080	5131344
AI753623	5131887
AI753667	5131931
AI753708	5131972
AI753968	5132232
AI754104	5132368
AI754431	5132695
AI754463	5132727
AI755118	5133382
AI755144	5133408
AI755283	5133547
AI760367	5176034

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Acc Num	GI Nbr
AI760770	5176437
AI760908	5176575
AI762707	5178374
AI765826	5232335
AI766705	5233214
AI767296	5233893
AI768688	5235197
AI769287	5235796
AI791364	5339080
AI796711	5362174
AI796793	5362256
AI798680	5364152
AI807806	5394372
AI809369	5395935
AI810190	5396756
AI811548	5398114
AI811719	5398285
AI814180	5425395
AI815380	5430926
AI815445	5430991
AI815655	5431201
AI816152	5431698
AI818599	5437678
AI821465	5440544
AI822051	5441130
AI822140	5441219
AI823903	5444574
AI824951	5445622
AI826456	5447127
AI827394	5448065
AI828592	5449263
AI829472	5450143
AI829878	5450549
AI857956	5511572
AI857997	5511613
AI860354	5513970
AI860586	5514202
AI860838	5514454
AI861786	5525905
AI862171	5526278
AI862834	5526941
AI864040	5528147
AI866692	5530884
AI866736	5530928
AI866820	5530851
AI867101	5540135
AI878826	5552875
AI878894	5552943
AI884829	5589993
AI888924	5594088
AI890362	5595526
AI912782	5632637
AI923459	5659423
AI923980	5659944
AI925203	5661167
AI926208	5662259

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Acc Num	GI Nbr
AI927130	5663094
AI927678	5663642
AI932225	5670962
AI935315	5674185
AI935636	5674506
AI937296	5676166
AI953354	5745664
AI962046	5754759
AI970562	5767388
AI972614	5769440
AI978703	5803733
AI982899	5810118
AI986352	5813629
AI990727	5837608
AJ000519	2739214
AJ001348	2407910
AJ001382	2764618
AJ001634	4138019
AJ002955	2632122
AJ004913	3288462
AJ004954	3005934
AJ004955	3005935
AJ004956	3005936
AJ005766	4128130
AJ006266	3287172
AJ010069	3483012
AJ010442	3954884
AJ010444	3954888
AJ010446	3954892
AJ010901	4468338
AJ011007	4468340
AJ012077	3766285
AJ012078	3766286
AJ012409	3881975
AJ131720	4468912
AJ132502	5629914
AJ132694	4454210
AJ223183	3925598
AJ223812	2894518
AJ228139	4585698
AJ236552	4837692
AJ237946	5701849
AJ238098	5262861
AJ241361	5019510
AJ241363	5019514
AJ388655	5578811
AL020990	3980348
AL021683	3217033
AL023577	4200329
AL023655	3925551
AL030996	3688349
AL031003	4007185
AL031296	4106564
AL031584	3980333
AL031775	4071041
AL034349	4680410

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Acc Num	GI Nbr
AL034417	5102616
AL034430	9795189
AL035835	5405471
AL035875	5927596
AL035924	5927633
AL036003	5405632
AL036026	5405652
AL036165	5927669
AL036211	5927688
AL036650	5406181
AL036732	5927883
AL036984	5927997
AL037114	5928053
AL037123	5928058
AL037961	5407276
AL037964	5407277
AL038463	5928413
AL038648	5407817
AL039504	5408546
AL039797	5408805
AL040084	5409054
AL041840	5421186
AL042869	5422305
AL042948	5422379
AL043113	5935737
AL043232	5935821
AL043665	5423052
AL044967	5433154
AL045399	5433548
AL045504	5433641
AL046250	5434334
AL046839	5936252
AL047334	4727905
AL047434	4727349
AL047758	4727946
AL047775	4727963
AL047980	4728813
AL048044	4728877
AL048056	4728889
AL048446	5936506
AL048540	5936558
AL048846	4728155
AL048962	4728271
AL049058	4728367
AL049229	4499961
AL049260	4500007
AL049346	4500130
AL049367	4500158
AL049381	4500168
AL049694	5650653
AL049696	5931893
AL049824	4902781
AL049940	4884183
AL049969	4884218
AL049999	4884252
AL050003	4884257

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Acc Num	GI Nbr
AL050011	4884080
AL050022	4884091
AL050120	4884145
AL050137	4884149
AL050179	4884392
AL050255	4886424
AL050272	4886498
AL050289	4886510
AL050290	4886512
AL050353	4914574
AL050380	4914582
AL050386	4914589
AL079445	5423339
AL079833	5435409
AL079980	5435554
AL080097	5262519
AL080099	5262522
AL080102	5262526
AL080150	5262604
AL080185	5262662
AL080192	5262673
AL096713	5419845
AL096719	5419854
AL096857	5541862
AL096858	5541864
AL109788	5725476
AL110153	5817055
AL110161	5817066
AL117561	5912101
AL117595	5912159
AL117604	5912174
AL117651	5912243
AL120989	5926990
AL121588	9581781
AL133044	6453455
AL133244	6491714
AP000131	4730900
AR003350	3964609
AR015927	3972204
AW001775	5848691
AW003634	5850550
AW006783	5855561
AW014416	5863173
AW020650	5874180
AW022287	5875817
AW022694	5876224
AW023497	5877027
AW028560	5887316
AW029294	5888050
AW044178	5904707
AW044647	5905176
AW081741	6036893
AW105540	6076275
AW149311	6197207
AW152280	6200180
AW166315	6397840

Acc Num	GI Nbr
AW188948	6463384
AW231122	6560418
AW265370	6642186
C00568	1432798
C01283	1433513
C02426	1434656
C06300	1503076
C17474	1579077
C17916	1579518
C18921	1580523
C18929	1580531
C21459	1622569
D00017	219909
D00039	3808177
D00068	220080
D00099	219941
D00760	220023
D01059	219887
D11094	219930
D11428	220009
D12676	219702
D13630	286000
D13639	285990
D13665	393318
D13666	393316
D13866	433410
D13988	285974
D14041	2326266
D14446	393314
D14657	285938
D14710	559324
D15050	457560
D16562	506336
D16947	598932
D16985	598617
D17032	598744
D17039	598762
D17174	598667
D17554	433415
D17793	457407
D21092	540512
D21254	575577
D21262	434764
D23661	432361
D25274	464185
D26125	556517
D26129	532677
D26443	472828
D26598	565646
D26599	565648
D26600	565650
D28473	551621
D29640	473930
D29641	6633994
D29956	473944
D30655	485387

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Acc Num	GI Nbr
D30658	577711
D31249	644129
D31345	644225
D31885	505097
D37766	2429078
D37991	1019367
D38073	862331
D38524	633070
D38551	1531549
D38553	559714
D42040	577292
D42042	577296
D42073	1262328
D42084	577314
D42085	577316
D42087	576555
D45198	971271
D45248	1008914
D45421	662289
D45915	1483130
D49372	1552240
D49387	1088447
D49396	682747
D49489	1136742
D49743	1840409
D50310	1183161
D50371	2605591
D50405	1665722
D50420	2618577
D50487	1742909
D50525	1167502
D52414	952650
D55094	956991
D55192	957089
D55671	870742
D56120	970603
D56406	971003
D58753	968387
D59253	1060898
D63874	968887
D63878	961447
D63881	961453
D67031	2696053
D78151	1060887
D78275	1526425
D78611	1655421
D79157	1181030
D79190	1181063
D79985	1136387
D79986	1136389
D79996	1136407
D79997	1136409
D80000	1136415
D80001	1136417
D82223	1183747
D82427	1183769

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Acc Num	GI Nbr
D83018	1827484
D83197	3893154
D84105	1256700
D84488	2388543
D86043	1864010
D86227	2081619
D86955	1871138
D87127	1817551
D87367	2317667
D87434	1665762
D87666	1620016
D87735	1620021
D87742	1665824
D88153	2289785
D88674	2641951
D89937	3184392
D90373	219477
D90453	219897
E00199	2168495
E01198	2169457
E01630	2169883
E01650	2169903
E01888	2170137
E01915	2170164
E01954	2170202
E01972	2170220
E01979	2170227
E02516	2170746
E02628	2170856
E03414	2171630
E03814	2172028
E05213	2173403
E06721	2174903
E07165	2175312
E07218	2175359
E07643	2175778
E08291	2176411
E08292	2176412
E08293	2176413
E08294	2176414
E08663	2176776
F00559	707267
F07635	673321
F11839	706153
F13527	710048
F22810	2061986
F24734	4810360
F25640	4811266
F30835	4816461
F35702	4821328
F37503	4823129
G48728	4529388
G52838	5224015
H00733	863666
H00756	863689
H00824	863757

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Acc Num	GI Nbr
H01164	864097
H01350	864283
H01610	864543
H01788	864721
H01926	864859
H02039	864972
H02230	865163
H02307	865240
H02824	865757
H02837	865770
H02848	865781
H04382	867315
H04493	867426
H04757	868309
H04810	868362
H04891	868443
H05039	868591
H05057	868609
H05140	868692
H05552	869104
H05580	869132
H05777	869329
H05875	869427
H05934	869486
H06273	869825
H06377	869929
H06380	869932
H06580	870112
H06675	870207
H07025	870557
H07071	870603
H08029	872851
H08119	872941
H08432	873254
H08478	873300
H08548	873370
H08560	873382
H08561	873383
H08564	873386
H08595	873417
H08730	873552
H09245	874067
H09335	874157
H09343	874165
H09392	874214
H09427	874249
H09455	874277
H09461	874283
H09600	874422
H09614	874436
H09636	874458
H09914	874736
H09939	874761
H10010	874832
H10098	874920
H10100	874922

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Acc Num	GI Nbr
H10356	875178
H10761	875581
H10778	875598
H11003	875823
H11036	875856
H11127	875947
H11130	875950
H11151	875971
H11320	876140
H11453	876273
H11454	876274
H11467	876287
H11562	876382
H11808	876628
H11838	876658
H12105	876925
H12190	877010
H12254	877074
H12290	877110
H12845	877665
H12946	877766
H13072	877892
H13300	878120
H13577	878397
H14057	878905
H14433	879253
H14723	879543
H14810	879630
H14986	879806
H15084	879904
H15094	879914
H15099	879919
H15111	879931
H15215	880035
H15274	880094
H15385	880205
H15416	880236
H15446	880266
H15560	880380
H15597	880417
H15676	880496
H15677	880497
H15913	880733
H15950	880770
H16015	880835
H16051	880871
H16401	881221
H16637	882877
H16704	882944
H16746	882986
H16751	882991
H16789	883029
H16903	883143
H16997	883237
H17003	883243
H17047	883287

Acc Num	GI Nbr
H17080	883320
H17121	883361
H17158	883398
H17184	883424
H17239	883479
H17335	883575
H17364	883604
H17412	883652
H17512	883752
H17550	883790
H17615	883855
H17731	883971
H17804	884044
H17860	884100
H17883	884123
H18335	884575
H18531	884771
H18715	884955
H18716	884956
H19013	885253
H19023	885263
H19026	885266
H19202	885442
H19229	885469
H19239	885479
H19359	888054
H19371	888066
H19522	888217
H19667	888362
H19686	888381
H19853	888548
H20652	889347
H20872	889567
H20908	889603
H21245	889940
H21540	890235
H21892	890587
H21943	890638
H22088	890783
H22346	891041
H22481	891176
H22698	891393
H22699	891394
H22856	891551
H22917	891612
H23049	891744
H23123	891818
H23170	891865
H23173	891868
H23255	891950
H23265	891960
H23315	892010
H23324	892019
H23329	892024
H23349	892044
H23979	892674

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Acc Num	GI Nbr
H23985	892680
H24105	892800
H24108	892803
H24126	892821
H24352	893047
H24688	893587
H25625	894748
H25972	895095
H27048	897038
H27646	897999
H28091	898444
H28119	898472
H28256	898609
H29207	900117
H29226	900136
H29250	900160
H29268	900178
H29295	900205
H29432	900342
H29484	900394
H29678	900588
H29718	900628
H30877	901787
H37774	907273
H37832	907331
H37989	907488
H38240	907739
H38263	907762
H38522	908021
H38804	908303
H38848	908347
H38864	908363
H39115	908614
H39221	908720
H39560	915612
H39991	916043
H40323	916375
H40604	916656
H40880	916932
H40964	917016
H41165	917217
H42664	918716
H42679	918731
H42722	918774
H44051	920103
H44784	920836
H45003	921055
H45390	921442
H45568	921620
H45810	921862
H45841	921893
H46041	922093
H46553	922605
H47358	923410
H47397	923449
H47627	923679

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Acc Num	GI Nbr
H48122	924174
H48472	986859
H48661	988501
H48677	988517
H48706	988546
H49263	989104
H49289	989130
H49751	989592
H49828	989669
H50094	989935
H50107	989948
H50500	990341
H50622	990463
H50656	990497
H50839	990680
H51050	990891
H51100	990941
H51461	991302
H51705	991546
H52353	992194
H52390	992231
H52672	992513
H53073	993220
H53275	993422
H53915	994062
H54023	994170
H54093	994240
H54285	994432
H54577	995103
H54628	994995
H54629	994996
H54660	995027
H54752	995172
H55854	1004498
H55909	1004553
H56344	1004988
H56348	1004992
H56594	1005238
H57180	1010012
H57310	1010142
H57887	1010719
H58118	1010950
H58119	1010951
H58234	1011066
H58452	1011284
H58645	1011477
H58708	1011540
H58872	1011704
H58873	1011705
H59203	1012035
H59230	1012062
H59259	1012091
H59618	1012450
H59725	1012557
H60038	1012870
H60175	1013007

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Acc Num	GI Nbr
H60321	1013153
H61242	1014074
H61243	1014075
H61464	1014296
H61698	1014530
H61835	1014667
H61979	1014811
H62009	1014841
H62103	1014935
H62387	1015219
H62801	1017147
H62894	1017240
H62985	1017331
H63472	1018273
H63706	1018507
H63826	1018627
H63976	1018777
H64147	1018948
H65261	1024001
H65395	1024135
H65595	1024335
H66023	1024763
H66030	1024770
H66070	1024810
H67188	1025928
H67282	1026022
H67292	1026032
H68107	1026847
H68308	1027048
H68403	1027143
H68509	1027249
H68664	1030126
H68845	1030355
H68952	1030178
H69143	1030469
H69156	1030482
H69334	1039540
H69608	1039814
H69683	1039889
H69785	1039991
H70140	1040346
H70394	1040600
H70774	1042590
H71703	1043519
H71713	1043529
H71848	1043664
H72113	1043929
H72119	1043935
H72474	1044290
H72917	1044733
H72918	1044734
H73265	1047473
H73590	1046649
H73727	1047231
H73816	1046750
H73817	1046751

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Acc Num	GI Nbr
H73866	1046800
H73914	1046915
H74086	1047298
H74264	1047610
H75569	1049497
H75703	1049646
H77641	1055730
H77766	1055855
H78484	1056573
H78537	1056626
H79088	1057177
H79469	1057558
H79534	1057623
H79559	1057648
H79629	1057718
H80063	1058152
H80103	1058192
H80655	1058744
H80684	1058773
H80685	1058774
H80749	1058838
H80804	1058893
H81009	1059098
H81199	1059288
H81200	1059289
H81331	1059420
H81359	1059448
H81938	1060027
H82536	1060625
H82848	1061518
H82891	1061561
H82974	1061644
H83067	1061737
H83178	1061848
H83225	1061895
H84153	1062824
H84211	1062882
H84229	1062900
H84480	1063151
H85272	1064213
H85475	1064497
H86642	1068221
H86876	1068455
H87106	1068685
H87536	1069115
H87703	1069282
H88734	1070994
H89637	1080067
H89788	1080218
H90219	1080649
H90577	1081007
H90718	1081148
H90767	1081197
H91614	1087192
H91776	1087354
H91845	1087423

Acc Num	GI Nbr
H92234	1087812
H92372	1087950
H92758	1099086
H92853	1099181
H93149	1099477
H93216	1099544
H93249	1099577
H93373	1099701
H93393	1099721
H93424	1099752
H93463	1099791
H93482	1099810
H93552	1099880
H93692	1100020
H93832	1101128
H94487	1102120
H94617	1102250
H94897	1102530
H94929	1102562
H95038	1102671
H95342	1102975
H95424	1103057
H95465	1108607
H95529	1108671
H95638	1108780
H95712	1108854
H95956	1109098
H95959	1109101
H95960	1109102
H96095	1109237
H96235	1109377
H96289	1109431
H96392	1109534
H96416	1109558
H96527	1110013
H96630	1110116
H96643	1110129
H96654	1110140
H96660	1110146
H96673	1110159
H96712	1110198
H96738	1110224
H96834	1110320
H97508	1118393
H97597	1118482
H97861	1118746
H97868	1118753
H97880	1118765
H97970	1118855
H98215	1119100
H98534	1123184
H98636	1123304
H98742	1123410
H98812	1123480
H98963	1123631
H98987	1123655

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Acc Num	GI Nbr
H99035	1123703
H99075	1123743
H99170	1123838
H99257	1123925
H99362	1124030
H99415	1124083
H99586	1124254
H99768	1124436
H99816	1124484
H99996	1124664
H99997	1124665
J00194	188231
J00196	188242
J02642	182862
J02645	181994
J02814	189875
J02853	598146
J02923	189501
J03015	337755
J03037	179771
J03040	338312
J03048	184487
J03143	184650
J03171	184645
J03209	188618
J03223	190419
J03248	183053
J03358	339714
J03464	179595
J03503	189765
J03528	188671
J03537	337513
J03575	189737
J03580	190705
J03745	182111
J03801	187243
J03802	190717
J03804	1707870
J03827	340418
J03909	186264
J03934	189245
J04080	179645
J04162	183036
J04164	177801
J04208	186391
J05192	178026
J05249	337349
J05633	186504
K00422	184322
K00558	340020
K00799	182681
K01144	188469
K01171	188264
K01396	177828
K02215	178639
K02765	179664

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Acc Num	GI Nbr
L00160	189904
L01279	185984
L01411	185924
L01413	185926
L02426	403455
L03146	185381
L03152	185387
L03156	185391
L03162	185397
L03168	185403
L03203	182984
L05095	388034
L05096	388035
L05425	179284
L06070	292509
L06145	189198
L07393	292423
L07515	184310
L07540	190153
L07633	186512
L08441	179295
L09159	307374
L11566	337492
L11700	436562
L12110	397791
L12168	178083
L12535	434050
L13799	306548
L13923	306745
L15702	291921
L16510	291887
L19597	306467
L19908	348207
L19956	306456
L20463	349448
L20941	507251
L22157	347321
L22569	348706
L23808	435969
L25259	416368
L25851	4406707
L27211	558656
L29158	465157
L32748	598167
L33179	516617
L33801	529236
L33854	598165
L34155	551596
L34600	609491
L35594	537905
L36983	1196422
L37368	1236282
L38486	790816
L38562	609486
L38951	893287
L39061	632997

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Acc Num	GI Nbr
L40736	722561
L43821	1294780
L47125	1237180
L47574	1000870
L47647	1000861
L49054	1066391
L77567	1377754
L78132	1932711
M10036	339840
M10119	182517
M10905	182696
M11147	182513
M11313	177869
M11353	184092
M11433	190947
M11507	339515
M11560	178350
M11718	180912
M11937	186076
M11948	190416
M12267	189328
M12938	182515
M13656	179620
M14200	181477
M14219	181169
M14221	181191
M14328	182113
M14354	182834
M14539	182836
M15796	181271
M16038	187268
M16342	184266
M16957	188249
M17017	179579
M17254	182186
M17517	180497
M17733	339688
M17885	190231
M17886	190233
M18216	178690
M19308	339782
M19715	339957
M19723	186726
M19888	338416
M20259	339686
M20471	179396
M20867	183059
M22009	185843
M22382	190126
M22538	986883
M22590	179418
M22918	189019
M22920	189021
M24194	187701
M24594	186262
M24630	514363

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Acc Num	GI Nbr
M25246	340233
M25280	187182
M25756	338050
M26066	189854
M26663	618463
M26880	340067
M27504	339809
M27635	1066785
M28424	178023
M28696	184843
M29064	337452
M29467	185920
M29469	185922
M29540	180222
M29548	181966
M29696	186365
M29870	190823
M29872	178131
M30608	340433
M31159	183115
M31165	339994
M31212	188589
M31606	189940
M33195	182487
M34455	185790
M34668	190738
M35198	9961228
M35543	182856
M36072	337494
M36501	177871
M37033	180142
M37104	179274
M38267	306971
M55150	182392
M55542	183001
M55543	829176
M55618	184483
M58549	187592
M60333	188268
M60334	188255
M60457	181249
M61715	340367
M62189	272435
M62896	187146
M62898	187147
M63180	339679
M63438	184847
M63488	337488
M63573	337998
M63838	184568
M64241	190813
M65209	184444
M65217	184404
M65292	183762
M69066	188625
M69181	641957

Acc Num	GI Nbr
M73547	190161
M73713	190633
M74019	186042
M74558	338087
M74775	187151
M76729	189519
M77233	337517
M77693	338391
M77830	4689438
M77945	273682
M81757	337732
M81844	178700
M83248	189150
M83653	179635
M83772	188630
M84443	183265
M85038	190189
M85677	274324
M86609	691766
M87068	179896
M87284	338651
M87339	1498255
M87789	185361
M87790	185363
M88468	307197
M90104	337925
M90809	185980
M93425	292408
M93426	190743
M93651	338038
M95929	189946
M96803	338442
M97856	184432
N20003	1124670
N20328	1125283
N20475	1125430
N20480	1125435
N20960	1126130
N20989	1126159
N21079	1126249
N21233	1126403
N21313	1126483
N21407	1126577
N21470	1126640
N21576	1126746
N21621	1126791
N21633	1126803
N22897	1137047
N22901	1137051
N22913	1137063
N23340	1137490
N23390	1137540
N23530	1137680
N23578	1137728
N23599	1137749
N23605	1137755

Acc Num	GI Nbr
N23756	1137906
N23877	1138027
N23996	1138146
N24046	1138196
N24155	1138305
N24281	1138431
N24401	1138551
N24437	1138587
N24609	1138759
N24805	1138955
N24868	1139018
N25150	1139300
N25204	1139354
N25578	1139926
N25920	1140268
N25945	1140293
N26083	1140431
N26163	1140511
N26171	1140519
N26769	1141117
N26928	1141276
N27118	1141466
N27159	1141507
N27799	1142280
N27802	1142283
N27916	1142397
N28391	1146627
N28524	1146760
N28536	1146772
N28729	1146965
N28754	1146990
N29133	1147369
N29763	1148283
N29825	1148345
N30205	1148725
N30256	1148776
N30348	1148868
N30517	1149037
N30553	1149073
N30557	1149077
N30573	1149093
N30680	1149200
N30699	1149219
N30713	1149233
N30728	1149248
N30747	1149267
N30751	1149271
N30959	1151358
N30976	1151375
N31283	1151682
N31292	1151691
N31459	1151858
N31806	1152205
N31866	1152265
N32019	1152418
N32045	1152444

Table 8A-1

Acc Num	GI Nbr
N32085	1152484
N32201	1152600
N32226	1152625
N32396	1152795
N32556	1152955
N32907	1153306
N32909	1153308
N32912	1153311
N32949	1153348
N33012	1153411
N33041	1153440
N33054	1153453
N33063	1153462
N33851	1154251
N33900	1154300
N34055	1154455
N34362	1155504
N34426	1155568
N34429	1155571
N34827	1155969
N34839	1155981
N34933	1156075
N34943	1156085
N34966	1156108
N35038	1156180
N35187	1156329
N35259	1156401
N35469	1156611
N35493	1156635
N35646	1156788
N35945	1157087
N36040	1157182
N36068	1157210
N36174	1157316
N36232	1157374
N36279	1157421
N36506	1157648
N36588	1157730
N36704	1157846
N36745	1157887
N36853	1157995
N38891	1162098
N38960	1162167
N39063	1162270
N39161	1162368
N39280	1162487
N39426	1162633
N39577	1162784
N39749	1163294
N39937	1163482
N40017	1163562
N40023	1163568
N40140	1163685
N40170	1163715
N40180	1163725
N40188	1163733

Table 8A-1

Acc Num	GI Nbr
N40495	1164092
N40582	1164179
N40679	1164276
N40889	1164486
N40919	1164517
N40968	1164566
N40997	1164595
N41052	1164650
N41577	1165608
N41645	1165676
N41768	1165799
N41826	1165857
N41842	1165873
N42045	1166076
N42062	1166093
N42469	1166899
N42500	1166930
N42665	1167095
N42801	1167231
N42826	1167256
N43819	1182347
N43856	1182384
N43976	1182504
N44101	1182629
N44141	1182669
N44278	1182806
N44296	1182824
N44490	1185743
N44673	1185839
N44764	1185930
N44889	1186055
N44907	1186073
N45091	1186257
N45114	1186280
N45131	1186297
N45138	1186304
N45313	1186479
N45441	1186607
N45525	1186691
N45616	1186782
N45732	1186898
N46050	1187216
N46299	1187465
N46324	1187490
N46759	1187925
N46796	1187962
N46804	1187970
N46872	1188038
N46888	1188054
N47113	1188279
N47302	1188468
N47311	1188477
N47316	1188482
N47362	1188528
N47388	1188554
N47444	1188610

Table 8A-1

Acc Num	GI Nbr
N47469	1188635
N47604	1188770
N47690	1188856
N47773	1188939
N47785	1188951
N47813	1188979
N47922	1189088
N47924	1189090
N48027	1189193
N48075	1189241
N48089	1189255
N48252	1189418
N48259	1189425
N48261	1189427
N48293	1189459
N48458	1189624
N48751	1189917
N48816	1189982
N49079	1190245
N49121	1190287
N49138	1190304
N49269	1190435
N49377	1190543
N49478	1190644
N49619	1190785
N49629	1190795
N49665	1190831
N49751	1190917
N49883	1191049
N49899	1191065
N50073	1191239
N50079	1191245
N50152	1191318
N50262	1191428
N50301	1191467
N50375	1191541
N50556	1191722
N50603	1191769
N50611	1191777
N50675	1191841
N50738	1191904
N50834	1192000
N50904	1192070
N50976	1192142
N51002	1192168
N51226	1192392
N51297	1192463
N51325	1192491
N51362	1192528
N51386	1192552
N51401	1192567
N51521	1192687
N51702	1192868
N51740	1192906
N51752	1192918
N51837	1193003

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Acc Num	GI Nbr
N51859	1193025
N51883	1193049
N52018	1193184
N52073	1193239
N52151	1193412
N52158	1193419
N52337	1193503
N52373	1193539
N52549	1193715
N52615	1193781
N52810	1193976
N52875	1194041
N52876	1194042
N52883	1194049
N52938	1194104
N52980	1194146
N53024	1194190
N53133	1194299
N53172	1194338
N53214	1194380
N53352	1194518
N53641	1194807
N53644	1194810
N53906	1195072
N54061	1195227
N54221	1195387
N54333	1195653
N54344	1195664
N54512	1195832
N54540	1195860
N54672	1195992
N54728	1196048
N54751	1196071
N54774	1196094
N54848	1196168
N54925	1196245
N54994	1197873
N55269	1198148
N56639	1199910
N56836	1200726
N56858	1200748
N56888	1200778
N57241	1201131
N57483	1201373
N57526	1201416
N57530	1201420
N57554	1201444
N57557	1201447
N57594	1201484
N57659	1201549
N57722	1201612
N57723	1201613
N57865	1201755
N57906	1201796
N57993	1201883
N58035	1201925

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Acc Num	GI Nbr
N58065	1201955
N58494	1202384
N58936	1202826
N59030	1202920
N59138	1203028
N59206	1203096
N59281	1203171
N59289	1203179
N59377	1203267
N59482	1203372
N59486	1203376
N59534	1203424
N59716	1203606
N59835	1203725
N62157	1209970
N62213	1210042
N62269	1210098
N62301	1210130
N62339	1210168
N62375	1210204
N62402	1210231
N62403	1210232
N62514	1210343
N62684	1210513
N62731	1210560
N62761	1210590
N62924	1210753
N62969	1210798
N63102	1210931
N63425	1211254
N63516	1211345
N63529	1211358
N63604	1211433
N63623	1211452
N63744	1211573
N63807	1211636
N63940	1211769
N63949	1211778
N63988	1211817
N63996	1211825
N64024	1211853
N64175	1212004
N64374	1212203
N64405	1212234
N64737	1212566
N64741	1212570
N64762	1212591
N64780	1212609
N64781	1212610
N64817	1212646
N64862	1212691
N66068	1218193
N66177	1218302
N66278	1218403
N66354	1218479
N66777	1218902

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Acc Num	GI Nbr
N67034	1219159
N67038	1219163
N67487	1219612
N67822	1219947
N68001	1224162
N68247	1224408
N68399	1224560
N68408	1224569
N68686	1224847
N68719	1224880
N69204	1225365
N69283	1225444
N69491	1225652
N69694	1225855
N69913	1226493
N70059	1226639
N70382	1226962
N70411	1226991
N70759	1227339
N70948	1227528
N71015	1227595
N71028	1227608
N71055	1227635
N71080	1227660
N71484	1228196
N71769	1228481
N71782	1228494
N71796	1228508
N72215	1229319
N72259	1229363
N72265	1229369
N72450	1229554
N72800	1229904
N72878	1229982
N72879	1229983
N72918	1230022
N73130	1230234
N73242	1230346
N73429	1230714
N73448	1230733
N73499	1230784
N73536	1230821
N73550	1230835
N73571	1230856
N73611	1230896
N73703	1230988
N73827	1231112
N73836	1231121
N73843	1231128
N73975	1231260
N74085	1231370
N74131	1231416
N74189	1231474
N74236	1231521
N74313	1231598
N74340	1231625

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Acc Num	GI Nbr
N74390	1231675
N74524	1231809
N74762	1232047
N74956	1237502
N75028	1237606
N75055	1237633
N75122	1237700
N75133	1237711
N75239	1237817
N75464	1238042
N75745	1238323
N75947	1238525
N76097	1238675
N76192	1238770
N76193	1238771
N76567	1239145
N77006	1239584
N77034	1239612
N77080	1239658
N77138	1239716
N77229	1239807
N77415	1240116
N77514	1240215
N77772	1240473
N78327	1241028
N78357	1241058
N78828	1241529
N78843	1241544
N78902	1241603
N79142	1241843
N79301	1242002
N79336	1242037
N79738	1242439
N79745	1242446
N79910	1242611
N80114	1242815
N80294	1242995
N80499	1243200
N80848	1243549
N81093	1243794
N81261	1256998
N81611	1257364
N86077	1439081
N87113	1440315
N89240	1442570
N89307	1442637
N89812	1443139
N89861	1443188
N90104	1443431
N90508	1443835
N90598	1443925
N90608	1443935
N90744	1444071
N90808	1444135
N90882	1444209
N91175	1444502

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Acc Num	GI Nbr
N91307	1444634
N91382	1444709
N91475	1444802
N91582	1444909
N91677	1263986
N91797	1264106
N91887	1264196
N91900	1264209
N91921	1264230
N91952	1264261
N91962	1264271
N92016	1264325
N92188	1264497
N92193	1264502
N92254	1264563
N92380	1264689
N92469	1264778
N92646	1264955
N92924	1265233
N93236	1265545
N93403	1265712
N93438	1265747
N93894	1266203
N93941	1266250
N94209	1266518
N94230	1266539
N94262	1266571
N94404	1266713
N94424	1266733
N94488	1266797
N94758	1267037
N95011	1267293
N95138	1267447
N95144	1267453
N95322	1267592
N95433	1267704
N95435	1267706
N95680	1267948
N95761	1268046
N98412	1269895
N98591	1270206
N99168	1270624
N99217	1269639
N99256	1269658
N99356	1270782
N99372	1270851
N99391	1270797
N99582	1271014
N99711	1271153
R00275	750011
R00283	750019
R00323	750059
R00425	750161
R00706	750442
R01139	750875
R01279	751015

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Acc Num	GI Nbr
R01323	751059
R01515	751251
R01637	751373
R01682	751418
R01732	751468
R02480	752216
R02739	752475
R02801	752537
R05416	756036
R06392	757012
R06566	757186
R06575	757195
R06653	757273
R06675	757295
R06705	757325
R06709	757329
R06900	758823
R07141	759064
R07167	759090
R07295	759218
R07560	759483
R08561	768789
R08769	768825
R09062	760985
R09561	761484
R09602	761525
R09724	761647
R09725	761648
R09980	761936
R10011	761967
R10103	762059
R10159	762115
R10284	762240
R10292	762248
R10662	762618
R10896	763631
R10917	763652
R11047	763782
R11529	764264
R11636	764371
R11888	764623
R12175	764910
R12817	765893
R12825	765901
R13243	766319
R13381	766457
R13517	766593
R13519	766595
R13546	766622
R13557	766633
R13558	766634
R13925	767001
R14044	767120
R14230	767306
R14275	767351
R14443	767519

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Acc Num	GI Nbr
R14496	767572
R14663	768936
R14908	769181
R14981	769254
R15357	769630
R15443	768191
R15708	767956
R15832	768247
R15922	768337
R16006	767988
R16069	767878
R16134	767943
R16137	767946
R16157	768085
R16367	769977
R16524	770134
R16543	770153
R16547	770157
R16603	770213
R16733	770343
R16957	770567
R17092	770702
R17157	770767
R17165	770775
R17180	770790
R17324	770934
R17337	770947
R17394	771004
R17642	771252
R17667	771277
R17717	771327
R17722	771332
R17731	771341
R17811	771421
R19158	772768
R19314	772924
R19337	772947
R19529	773139
R19773	774407
R19956	774590
R19977	774611
R20227	774861
R20392	775026
R20416	775050
R20648	775429
R20813	775594
R21136	775917
R21511	776292
R22155	776936
R22239	777020
R22308	777089
R22748	777573
R23083	777971
R23190	778078
R23270	778158
R23408	778296

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Acc Num	GI Nbr
R23483	778371
R23738	778626
R24186	779074
R24450	779338
R24530	779418
R24591	779479
R24880	779768
R24974	779862
R25234	781369
R25389	781524
R25398	781533
R25652	781787
R25989	782124
R26344	782479
R26417	782552
R26456	782591
R26526	782661
R26531	782666
R26732	782867
R26744	782879
R26803	782938
R26892	783027
R26919	783054
R26960	783095
R26977	783112
R27457	783592
R28400	784535
R29720	1512128
R30849	786641
R31386	787229
R31413	787256
R31625	787468
R31701	787544
R31758	787601
R32078	787921
R32248	788091
R32405	788248
R32440	788283
R32959	788802
R33152	789010
R33355	789213
R33401	789259
R33477	789335
R33642	789500
R33720	789578
R33763	789621
R34225	790083
R34273	790131
R34314	790172
R34382	791283
R34566	791467
R34567	791468
R34584	791485
R34725	791626
R35230	792131
R35283	792184

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Acc Num	GI Nbr
R35500	792401
R35948	792849
R36081	792982
R36144	793045
R36207	793108
R37093	794549
R37165	794621
R37224	794680
R37511	794967
R37738	795194
R37791	795247
R37817	795273
R37876	795332
R38306	795762
R38619	796075
R38645	796101
R38685	796141
R38703	796159
R38899	796355
R38917	796373
R38946	796402
R38951	796407
R38966	796422
R38995	796451
R39111	796567
R39239	796695
R39258	796714
R39769	797225
R39861	797477
R40057	822754
R40105	820806
R40176	822802
R40228	820872
R40231	820875
R40449	820898
R40481	822861
R40649	820986
R40918	823120
R40946	823146
R41294	816607
R41943	817640
R41965	817660
R41981	817676
R41998	800222
R42061	817007
R42168	820559
R42174	820565
R42182	820573
R42317	825255
R42714	819659
R42781	819700
R42934	819840
R43017	820079
R43026	820088
R43093	820154
R43189	825415

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Acc Num	GI Nbr
R43250	821357
R43323	821430
R43471	819989
R43535	821464
R43713	821626
R43734	821647
R43755	823606
R43798	823647
R44077	821945
R44327	821298
R44346	820642
R44739	824117
R44741	824119
R44985	824339
R45008	823367
R45056	823413
R45111	823465
R45116	823470
R45255	803979
R45292	822151
R45321	822178
R45358	822214
R45367	822223
R45636	823848
R45672	822118
R45963	823207
R45976	823218
R46000	823239
R46794	822611
R47979	810005
R48303	810329
R48477	810503
R48844	810870
R49124	820193
R49144	820212
R49459	820357
R49568	820412
R49587	820431
R50761	812663
R50870	812772
R51015	812917
R51021	812923
R51242	813144
R51354	813256
R51382	813284
R51493	813395
R51946	813848
R52030	813932
R52037	813939
R52161	814063
R52597	814499
R52682	814584
R52901	814803
R53323	815225
R53351	815253
R53889	815791

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Acc Num	GI Nbr
R53928	815830
R53930	815832
R53942	815844
R54035	815937
R54049	815951
R54160	816062
R54249	816151
R54444	816346
R54541	816443
R54559	816461
R54590	816492
R54592	816494
R54610	819042
R54779	819301
R55105	824441
R55140	824369
R55150	824379
R55185	824480
R55490	824785
R55619	824914
R55626	824921
R55747	825822
R56043	826149
R56123	826229
R56562	826668
R56604	826710
R56643	826749
R56738	826844
R59087	829782
R59135	829830
R59304	829999
R59371	830066
R59562	830257
R59681	830376
R59722	830417
R59833	830528
R60094	830789
R60705	831400
R60717	831412
R60730	831425
R60807	831502
R61067	831762
R61073	831768
R61163	831858
R61187	831882
R61297	831992
R61372	832067
R61601	832296
R61662	832357
R61779	832474
R61845	832540
R61871	832566
R62242	834121
R62288	834167
R62460	834339
R62603	834482

Table 8A-1

Acc Num	GI Nbr
R62604	834483
R62612	834491
R63104	834983
R63129	835008
R63137	835016
R63515	835394
R63543	835422
R63747	835626
R63790	835669
R63811	835690
R63841	835720
R63900	835779
R64004	835883
R64251	836130
R64693	836572
R64716	837354
R65798	838436
R65993	838631
R66056	838694
R66262	838900
R66268	838906
R66310	838948
R66438	839076
R66540	839178
R66633	839271
R66863	839501
R66922	839560
R67283	839921
R68091	841608
R68150	841667
R68344	841861
R68539	842056
R68581	842098
R68634	842151
R68669	842186
R68803	842320
R68805	842322
R69117	842634
R69236	842753
R69307	842824
R69567	843084
R69622	843139
R69671	843188
R69798	843315
R69853	843370
R70318	843835
R70598	844115
R70649	844166
R70658	844175
R70867	844384
R70925	844442
R71151	844668
R71391	844908
R71440	844957
R71627	845144
R71689	845721

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Acc Num	GI Nbr
R72075	846107
R72243	846275
R72244	846276
R72688	846720
R72913	846945
R73354	847386
R74004	848374
R74253	848623
R74357	848727
R74415	848785
R76263	850945
R76394	851076
R76544	851193
R76749	851381
R77104	851736
R77226	851858
R77864	852974
R78287	853397
R78465	854758
R78469	854762
R78490	854755
R78498	854779
R78516	854797
R78548	854829
R78585	854866
R78591	854872
R78597	854878
R78724	855005
R78971	855252
R79082	855363
R80322	856603
R80990	857271
R81830	858433
R83213	928090
R83610	928487
R83758	928635
R83836	928713
R83880	928757
R85090	943496
R85213	943619
R85342	943748
R85387	943793
R85537	943943
R86035	944441
R86305	944711
R86721	945630
R87650	946463
R88192	947005
R88242	947055
R89224	954051
R89260	954087
R89615	954442
R90930	958470
R90934	958474
R91266	958806
R91577	959117

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Acc Num	GI Nbr
R91686	959226
R91689	959229
R91953	959493
R91986	959526
R92123	959663
R92281	959821
R92452	959992
R92602	960142
R92609	960149
R92806	965160
R92852	965206
R92994	965348
R93124	967290
R93255	967421
R93542	967708
R93551	967717
R93621	967787
R93715	967881
R93783	967949
R94456	969851
R94542	969937
R94947	973677
R95684	981344
R95691	981351
R95731	981391
R95740	981400
R95749	981409
R95778	981438
R96240	981900
R96290	981950
R96527	982187
R96552	982212
R96568	982228
R96579	982239
R96668	982328
R96941	982601
R97220	982880
R97233	982893
R97502	983162
R97836	983496
R97846	983506
R98242	983902
R98407	985119
R98485	985002
R98532	985049
R98592	985193
R98623	985224
R98851	985452
R98903	985504
R99092	985693
R99758	986359
R99831	986432
S42404	253701
S47339	258822
S50732	261239
S59049	299704

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Acc Num	GI Nbr
S62490	385715
S68015	461032
S68288	544762
S69002	545407
S69272	546087
S70290	546602
S71381	551546
S73813	765255
S74678	241477
S74681	807062
S74728	797409
S75295	913392
S75548	914099
S77601	998394
S78085	998900
S78271	999379
S78569	1042081
S79639	1168161
S79895	1195555
S82081	1488412
S82470	1699264
S87759	247168
T06718	317867
T06997	318146
T08377	389405
T10557	390711
T10942	391096
T12310	596997
T12814	413718
T12940	2596196
T17422	519584
T18696	485626
T18962	601005
T19018	601061
T19291	601334
T19594	597339
T20087	597832
T22417	2597028
T22418	2597029
T24606	534231
T26540	773857
T27413	601687
T27579	609677
T30099	612197
T30369	612467
T33345	615443
T33406	615504
T34178	616276
T36122	618220
T37405	621222
T38698	622515
T38700	622517
T40311	647946
T44091	2758894
T46131	2762829
T47520	649500

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Acc Num	GI Nbr
T47541	649521
T47693	649673
T48366	650346
T49651	651511
T49657	651517
T49712	651572
T49801	651661
T50828	652688
T52152	654012
T52893	654753
T53773	655634
T53990	655851
T54750	656611
T55728	657589
T55770	657631
T57069	658930
T57235	659096
T57441	659302
T57778	659639
T57803	659664
T59256	661093
T59798	661635
T59873	661710
T60048	661885
T60482	663519
T60926	663963
T61078	664115
T61456	664493
T61896	665139
T62048	665291
T62179	665422
T62491	666148
T62627	666284
T63171	666828
T63201	666858
T63324	667189
T63587	667452
T64048	667913
T64262	668127
T64837	673882
T64880	673925
T64887	673932
T64956	674001
T65058	674103
T65407	674452
T65833	674878
T66814	676254
T66816	676256
T66824	676264
T66936	676376
T67053	676493
T67271	676711
T68321	679469
T68333	679481
T68645	679793
T68892	680040

Table 8A-1

Acc Num	GI Nbr
T69073	680221
T69468	680616
T69603	680751
T70109	681257
T70123	681271
T70398	681546
T70437	681585
T70541	681689
T70810	685331
T70901	685422
T71209	685730
T71272	685793
T71460	685981
T71578	686099
T71841	686362
T72235	686756
T72259	686780
T72691	689366
T73614	690289
T74141	690816
T74284	690959
T74394	691069
T74846	691521
T75041	691803
T77100	694303
T77308	694511
T77499	694702
T77595	694798
T77733	694936
T77893	695096
T78909	697418
T80061	698570
T80132	698641
T80232	698741
T81140	704025
T81289	704174
T81338	704223
T81514	704521
T81658	704665
T81891	704898
T82022	705029
T82907	711195
T83117	711405
T83550	711838
T83630	711918
T83657	711945
T83997	712285
T84472	712760
T84975	713327
T85249	713601
T86983	715335
T87010	715362
T87341	715693
T89094	717607
T89996	718509
T90074	718587

Table 8A-1

Acc Num	GI Nbr
T90236	718749
T90355	718868
T90363	718876
T90375	718888
T90560	719073
T90920	722833
T91039	722952
T91244	723157
T91644	723557
T92021	723934
T93627	726800
T94055	727543
T94974	728462
T95052	733676
T95113	733737
T95274	733898
T95333	733957
T95504	734128
T95650	734274
T95689	734313
T95748	734372
T96522	735146
T96601	735225
T96688	735312
T96718	735342
T96804	735428
T96832	735456
T96935	735559
T96986	735610
T97170	735794
T97457	746802
T97782	747127
T97868	747213
T98151	747496
T98182	747527
T98394	748131
T98414	748151
T98506	748243
T98612	748349
T98628	748365
T98719	748456
T99043	748780
T99055	748792
T99105	748842
T99176	748913
T99280	749017
T99312	749049
T99617	749354
U01923	460085
U02032	404014
U02493	407307
U03891	4895107
U04313	453368
U04735	460147
U05875	463549
U07151	460624

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Acc Num	GI Nbr
U07431	470397
U07516	470567
U07550	469170
U07919	995897
U08815	508722
U09196	483929
U09278	1888315
U09623	790523
U09813	1008454
U10117	498909
U10439	577169
U10485	505685
U10550	762886
U12170	529172
U13369	555853
U13665	606922
U13738	561667
U14187	642832
U14394	608128
U14603	894158
U14750	984955
U14966	550012
U14967	550014
U14968	550016
U14970	550020
U15008	600747
U16306	608514
U16850	576644
U17714	4049267
U18728	642533
U19769	924600
U21128	699576
U21911	736401
U24105	1638873
U25789	808089
U25804	886049
U27143	862932
U27460	881393
U27467	1079557
U27768	1216372
U28249	897916
U28488	1199577
U32989	993045
U33760	995823
U33818	1163176
U36336	1209628
U36764	1036804
U37230	1574941
U37283	1165211
U37519	1051280
U39050	1063685
U39360	1066079
U41060	1256000
U41371	1173904
U41514	1136284
U41515	1209723

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Acc Num	GI Nbr
U41569	1136554
U41850	4096826
U42457	4096851
U42458	4096853
U42593	4096859
U42594	4096861
U43701	1399085
U44772	1314354
U48251	3142287
U50079	1277083
U50534	1685103
U50939	1314559
U51478	1522634
U51920	1256819
U51990	1805248
U54558	2351377
U54562	2351381
U54711	1381131
U56255	1399688
U57091	1457953
U57693	1373376
U57847	1373420
U59288	1381789
U59808	4097420
U60061	1927203
U60067	4204942
U60068	4204944
U60115	2853223
U60337	2809322
U60975	5030423
U61083	4097430
U61084	4097432
U61397	1518693
U62589	1947042
U62891	1421817
U63743	1695881
U64898	2897866
U65785	1794218
U66661	1857125
U66691	1906576
U67171	2326174
U68140	2406564
U68566	1916621
U70322	1613833
U70734	2360942
U73379	2062372
U73522	4098123
U77054	1679749
U79258	1710211
U80735	2565045
U82258	1773056
U82761	2852124
U84581	1814071
U85429	1835588
U86602	1835785
U86782	2073565

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Acc Num	GI Nbr
U87564	4099452
U87791	4099481
U87954	4099505
U90441	2439984
U90552	2062705
U90878	2957144
U90907	1913886
U90909	1913889
U91321	2951946
U91618	1907392
U91919	2209337
U91942	2894828
U92018	2052460
U94586	1946691
U94855	2055430
U95367	2197000
U96759	2738243
U96915	2108209
U97251	4100383
V00567	34615
V00594	37120
W00390	1271799
W00491	1271910
W00856	1272836
W00895	1272875
W01113	1273161
W01197	1273390
W01340	1273360
W01458	1273457
W01501	1273546
W01713	1273712
W01830	1273810
W01974	1273953
W02333	1274331
W02702	1274680
W03018	1274996
W03191	1275209
W03373	1275394
W03482	1275346
W03488	1275371
W03687	1275532
W04244	1276143
W04385	1276293
W04411	1276319
W04496	1276121
W04674	1277462
W04713	1277433
W04744	1277484
W04928	1277648
W05406	1278137
W05514	1278227
W05607	1278318
W05834	1278566
W07043	1281065
W07068	1281081
W07798	1281878

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Acc Num	GI Nbr
W15150	1289550
W15274	1289664
W15339	1289719
W15521	1289932
W16596	1290978
W16715	1291115
W16724	1291124
W19519	1295437
W19646	1295652
W20458	1295228
W21015	1297911
W21055	1297931
W21081	1297957
W21107	1298130
W21108	1298131
W21213	1298245
W21317	1298359
W21390	1298461
W21572	1297874
W21597	1297908
W22929	1299762
W23214	1300054
W23598	1300648
W23757	1300591
W23819	1300643
W23834	1300879
W23937	1300752
W24147	1301108
W24279	1301104
W24499	1301455
W24628	1301538
W24833	1303647
W24886	1302751
W25202	1303076
W26401	1307163
W27126	1306498
W28005	1308016
W28729	1308677
W30772	1311763
W31088	1312078
W31245	1312237
W31683	1312695
W31757	1312846
W32096	1313292
W32135	1313128
W32227	1313239
W32408	1313398
W32715	1313706
W32947	1314900
W33012	1315017
W33021	1315158
W35166	1317082
W35256	1317162
W37075	1320290
W37112	1318961
W37280	1318874

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Acc Num	GI Nbr
W37305	1319036
W37375	1319114
W37424	1319018
W37447	1319061
W37573	1319178
W37634	1319286
W37683	1319297
W37689	1319372
W37763	1319516
W37833	1319447
W37993	1319606
W38391	1320186
W38600	1320261
W38679	1320384
W38890	1320596
W39160	1320887
W39443	1321150
W40404	1324203
W40516	1324459
W42450	1326931
W42459	1326949
W42512	1326962
W42556	1326987
W42812	1327272
W44508	1330009
W44701	1328892
W44860	1328950
W45008	1329089
W45098	1329181
W45572	1329653
W45588	1329753
W45690	1329780
W46155	1330872
W46341	1330929
W46488	1331116
W46575	1331240
W46667	1331295
W46679	1331307
W46900	1331538
W46964	1331602
W46977	1331615
W47073	1331712
W47077	1331716
W47101	1331760
W47115	1331969
W47156	1331806
W47184	1331892
W47230	1331870
W47260	1332077
W47324	1331982
W47361	1332000
W47363	1332002
W47416	1332213
W47454	1332114
W47641	1332319
W48619	1337075

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Acc Num	GI Nbr
W48685	1336854
W48762	1336911
W48793	1336942
W48852	1336981
W51760	1349989
W51794	1349845
W51909	1349864
W52085	1349282
W52104	1350008
W52186	1349347
W52248	1349495
W52272	1349402
W52378	1349510
W52627	1349603
W52669	1349812
W52773	1350216
W53029	1349929
W55924	1357814
W55967	1357856
W56081	1357971
W56189	1358146
W56334	1358449
W56597	1358522
W56634	1358492
W56753	1358619
W56771	1358637
W56793	1358658
W57698	1364641
W58028	1364811
W58092	1364826
W60015	1366774
W60414	1367398
W60565	1367343
W60701	1367460
W60718	1367496
W60820	1367578
W60845	1367603
W63776	1371377
W65294	1373620
W65409	1373552
W65460	1373464
W67174	1376055
W67330	1376199
W68219	1377157
W68220	1377158
W68261	1377131
W68265	1377135
W68511	1377381
W69184	1378666
W69211	1378471
W69472	1378734
W69544	1378815
W69648	1379217
W69668	1378927
W69814	1379142
W69878	1379158

Table 8A-1

Acc Num	GI Nbr
W69953	1379213
W69960	1379240
W70065	1379326
W70343	1379643
W72005	1382405
W72201	1382650
W72293	1382896
W72436	1382362
W72665	1382485
W72679	1382499
W72748	1382726
W72798	1382911
W72815	1382791
W72909	1383044
W73087	1383221
W73172	1383326
W73527	1383660
W73587	1383925
W73748	1384017
W74133	1384315
W74359	1384665
W74701	1384924
W75938	1386401
W75957	1386331
W76278	1386720
W76286	1386520
W76300	1386534
W76320	1386554
W76368	1386592
W76584	1386830
W78156	1388679
W78754	1389291
W78773	1389310
W78794	1389482
W78928	1389505
W79283	1390560
W79345	1390477
W79382	1390037
W79647	1390075
W79731	1390158
W80611	1391698
W80739	1391757
W81118	1391617
W81135	1391349
W81214	1392301
W81371	1392613
W81506	1392697
W81576	1392625
W81617	1392656
W81662	1392290
W81668	1392375
W84366	1395478
W84370	1395482
W84584	1396004
W84627	1395738
W84690	1395799

Table 8A-1

Acc Num	GI Nbr
W84808	1396007
W84820	1395950
W85697	1398344
W85781	1398280
W85847	1398584
W85878	1398307
W86214	1398827
W86335	1398784
W86360	1398809
W86378	1398196
W86391	1398848
W86445	1400231
W86523	1400450
W86823	1400622
W86832	1400561
W86860	1400589
W86875	1400604
W86947	1400686
W87384	1401439
W87541	1401596
W87713	1401767
W87752	1401837
W87826	1401901
W88497	1404009
W88571	1404043
W88587	1404059
W88681	1404392
W88884	1404366
W88967	1404003
W89066	1403952
W90002	1405980
W90164	1406303
W90175	1406474
W90211	1406201
W90224	1406214
W90323	1406703
W90353	1406591
W90506	1406292
W90519	1406324
W90522	1406388
W90529	1406395
W90659	1406635
W90693	1406781
W90740	1406686
W90793	1406759
W91879	1424261
W91888	1424280
W92258	1424623
W92399	1424763
W92775	1421928
W92779	1421932
W92812	1421965
W92946	1422098
W92963	1422115
W92964	1422116
W93067	1422239

Table 8A-1

Acc Num	GI Nbr
W93113	1422275
W93163	1422316
W93178	1422331
W93188	1422341
W93212	1422384
W93382	1422504
W93407	1422549
W93568	1422911
W93592	1422713
W93709	1422851
W94009	1423130
W94063	1423194
W94165	1423288
W94401	1423620
W94460	1423590
W94714	1423854
W94994	1424114
W95000	1424169
W95016	1424136
W95279	1425205
W95594	1425570
W95757	1425712
W95801	1425736
W96146	1426121
W96184	1426090
W96325	1426280
W96506	1426500
W99251	1432178
W99328	1435222
X00351	28251
X00457	36405
X00497	32130
X00570	28802
X00620	54289
X00650	52249
X00756	21862
X01111	31643
X01213	12944
X01405	35215
X01630	28871
X01677	31644
X01742	35324
X02422	33344
X02457	32153
X02490	32695
X02530	33917
X02761	31396
X02990	37909
X04098	28338
X04236	23922
X04412	35447
X04470	28638
X05231	38266
X05232	36632
X05360	29838
X05656	19297

Table 8A-1

Acc Num	GI Nbr
X05908	34387
X06409	30204
X06617	36143
X06700	30053
X06747	36101
X07362	3928268
X07549	29707
X07695	34072
X07819	35798
X07820	36628
X07979	31441
X12451	29714
X12597	32326
X12791	36112
X13238	1200056
X13425	31590
X13694	35147
X13839	28329
X13923	30294
X14420	30057
X14787	37464
X15187	37260
X15722	31824
X15729	38317
X15949	33966
X16850	23711
X16940	36502
X17206	34391
X52426	30376
X52966	34200
X53296	32578
X53331	34613
X53586	33943
X54137	433889
X54304	34755
X54473	311347
X54941	29976
X55654	14015
X55885	34030
X55999	4236
X56160	37226
X56510	33330
X56932	23690
X56998	37564
X56999	37568
X57351	311373
X57352	311374
X57766	456256
X57809	33714
X57812	33723
X57824	33747
X58082	33222
X58092	33232
X59417	35681
X59706	34204
X59841	35314

Table 8A-1

Acc Num	GI Nbr
X60111	34768
X60146	506609
X62534	32332
X62744	36062
X63071	30487
X63432	28335
X63629	35322
X64707	29382
X64875	398163
X65614	36177
X65923	31302
X67325	35183
X67698	37476
X67951	287640
X69111	32294
X69151	37642
X70476	298096
X71087	288396
X72452	441372
X72467	441402
X72964	441311
X73902	452754
X74330	510405
X75185	496353
X75308	516385
X75593	452319
X75861	456258
X77548	469145
X78136	460772
X78947	474933
X79234	495125
X80695	619490
X81109	535057
X81696	940516
X81817	550342
X82018	558598
X84373	940538
X84958	1177475
X85160	732780
X85372	806563
X85373	806565
X85545	1052736
X86772	870917
X87176	1050516
X87212	1006656
X87241	1107686
X87388	1304319
X87446	854096
X87455	854134
X87843	1089847
X89589	1015480
X89750	1150425
X91257	1050526
X94754	1702931
X95073	2879814
X95747	1514580

Table 8A-1

Acc Num	GI Nbr
X95748	1514578
X95749	1514576
X96401	1841919
X97065	1296665
X97324	1806039
X98263	1770461
X98327	1403064
X98505	1666207
X98717	1418566
X99062	1419545
X99920	1694827
Y00052	30308
Y00282	36048
Y00291	32025
Y00345	35569
Y00503	34038
Y08247	1561601
Y08685	2564246
Y08982	3256190
Y09022	1653999
Y09188	2230868
Y10351	3021391
Y11251	1848180
Y11435	2910996
Y12653	2546963
Y12860	2808530
Y13247	2117158
Y13936	2315201
Y14736	2765422
Y14737	2765424
Y14738	2765426
Y16241	3378195
Y16961	3970716
Y17392	3212109
Y17941	3451198
Y17957	10241692
Z11773	36602
Z11890	33202
Z11894	33200
Z16598	23145
Z17355	30801
Z17621	16779
Z18325	33294
Z19171	28990
Z20504	27249
Z22658	297411
Z24575	394944
Z24588	394957
Z24596	394965
Z24616	394985
Z24636	395005
Z24640	395009
Z24659	395030
Z30570	861003
Z33597	488686
Z42302	565711

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Acc Num	GI Nbr
Z43536	571116
Z45184	574387
Z46347	560841
Z46606	575250
Z46622	575240
Z47087	860989
Z47552	623239
Z47727	717186
Z68926	3928220
Z68928	3928222
Z68929	3928223
Z68940	3928236
Z69025	3928325
Z74615	1418927
Z74616	1418929
Z75331	2204214
Z75668	1531982
Z83843	2578095

TABLE 8B

Sequence 3068: found in patent publication WO99/18126
CGCGGTGGCGGCCGAGGTACAATTTATGCAGAACTTCAGGGATGTTTGTATTCATCAAGA
CAAGAAGATTCATCTCACAGTGGTGTATTTTGGTAAAGAAGGACTGTCTAAAGTCAAGTC
TATCCTAGAATCTGTCACCAGTGAGTCTAATTTTCACAATTACACCTTGGTCTCATTGAA
TGAAGAATTTAATCGTGGACGAGGACTAAATGTGGGTGCCCGAGCTTGGGACAAGGGAGA
GGTCTTGATGTTTTTCTGTGATGTTGATATCTATTTCTCAGCCGAATTCCTTAACAGCTG
CCGGTTAAATGCTGAGCCAGGTAAGAAGGTGTTTTACCCTGTGGTGTTCAGTCTTTACAA
TCCTGCCATTGTTTATGCCAACCAGGAAGTGCCACCACCTGTGGAGCAGCAGCTGGTTCA
CAAAAAGGATTCTGGCTTTTGGCGAGATTTTGGCTTT
Sequence 3069: found in patent publication WO99/46380
ACCGCGGTGGCGGCCGANGTACGCGGGAGCCCTCTCACTCCTCACTGAGTCCCTCTGAAC
GTGCTAAAATGGGAAGGAGGCGGAGTTTTGCTGATCTGNTAAATTCTTAGTGAAGTTTCC
TCGATTTCCAGTGGCTGCTGTNGTTTGAGTTTGGTTTGGAGCAAAACTGAGGTAGTCCTA
ACATT

Sequence 3462: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTT
Sequence 3463: found in patent publication WO99/53040
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTACTGCTAAA
CTATATTAACTCATAATAAAAAGTAACTAGTCAAAATTTANAACATTCTGATCAAAATGG
GTCTGCACATGCCTTTCAAACACCTGCTGGTCATAGTCAGGAGGGAACTGCTCGCTACAC
ATCGGCACACCTTCCAGTGACTTTCAACATGTTCTTCAAATTTGCTCTGATCATAGTTA
GGAGGAAACATTAACTCACANAGGGGACACTTCTTGTGAACATCAAAGCTGGAATCAAAG
CAAAAGCCTGTNCCATGCCCAC
Sequence 3464: found in patent publication WO99/18126
CCCTTAGCGTGGTCGCGGCCGAGGTACTATGCTATTTTACTTTTTTGATATAAAATCAAG
ATATTTCTTTGCTGAAGTATTTAAATCTTATCCTTGTATCTTTTTATACATATTTGAAAA
TAAGCTTATATGTATTTGAACTTTTTTGAAATCCTATTCAAGTATATTTATCATGCTATT
GTGATATTTTAGCACTTTGGTAGCTTTTACACTGAATTTCTAAGAAAATTGTAAAATAGT
CTTCTTTTATACTGTAAAAAAAGATATACCAAAAAGTCTTATAATAGGAATTTAACTTTA
AAAACCCACTTATTGATACCTTACCAT
Sequence 3465: found in patent publication WO98/39448
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTCCTAGATGACATATCGAGTCAACATGAAGC
CTTANCTGAAATGAATGATTCAGGATATTAATGAGAAATTCTCACAAATGATATGCATTT
AGGAAATGATTTTGCTTTCCTTAAATAGTTCNAAGGCTTGAAAATAAACTTTCTTTTTGC
ATTTCTTTNAGAATGNTNGNTCATTAACAACTTTTAACCTTATCTTCCTNTTCTNCTTAG
CCCTTAACAGACNGAGTNCATTCTATGNTGGAAATAACAAGAACTTGA
Sequence 3466: found in patent publication WO99/53040
CCCTTAGCGTGGTCGCGGCCGAGGTACGCGGGAAAGCAGAGCTAGTAATGCTTTTTGAGT
TTCATGTTGGTTTATTTTCACAGATTGGGGTAACGTGCACTGTAAGACGTATGTAACATG
ATG
Sequence 3467: found in patent publication WO99/53040
CCCTTTCGAGCGGCCGCCCGGGCAGGTGCTCAAAATATAAGCAGCTTGAAACTGGCTTTA
CCAATCTTGAAATTTGACCACAAGTGTCTTATATATGCAGATCTAATGTAAAATCCAGAA
CTTGGACTCCATCGTTAAAATTATTTATGTGTAACATTCAAATGTGTGCATTAAATATGC
TTCCACAGTAAAATCTGAAAAACTGATTTGTGATTGAAAGCTGCCTTTCTATTTACTTGA
GTCTTGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3468: found in patent publication WO99/18126
GATATCTGCAGAATTCGCCCTTTCGAGCGGNCGCCCGGGCAGGTACGCGGGAAATAATGC
TTGAATACAAGTGACTAAGCCAACAACAGAATAAATACTTTTATAGTAGTTTTATAATCC
TGAAATTCGAAAGCTTTCCCAATTGCACTTGCATCTAAACAAAACTGTTGCAGTTTTTAC
TCTATTTATTTTGTTCCCCATGTTTATGAAAGTCCTGCACAGTTTCAAAGGCATGGTAAA
TAATATATCAATGTTTATGTAGTCTGTTACAGAAACAGCTATAGATAACATTATCCAGTG
AAGAGCAAAATCCAAGCTTTAGAAAAATATTCATGCATGCAATTTTGACATATCTTAAAA
AATAGGT
Sequence 3469: found in patent publication WO99/55858

TABLE 8B

CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGATGAAGCAATTGCTGAATTGGATAC
GCTGAATGAAGAGTCTTATAAAGACAGCACTCTGATCATGCAGTTACTTAGGGACAATCT
CACTCTGTGGACATCGGAAAACCAGGGAGACGAAGGAGACGCTGGGGAGGGAGAGAACTA
ATGTTTCTCGTGCTTTGTGATCTGTTCAGTGTCACTCTGTACCTCGGCCGCGACCACGCT
AAGGG
Sequence 3470: found in patent publication WO99/57132
CCCTTTCGAGCGGCCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTGG
GATTCTTGGTAAAATTTTATCCAAAAAACAGGATACATATATATTTAGAGAAGGAAATAT
GAAATCAAGAGTTTTGGCAGCCCCTGCTTTTTTTTTTTTTTAGCTCCCTAAAGACTGTA
GCAGGATAAAAGGATCACTGGCTCCGAGTCTCTTTGAGATAACAAGTGATGAAATAAAAA
AGAAAGCCCATACCCTCAAATAAGGTCAGGTAACCCCATTGCCCACCCTCCCTACAAGGN
AA
Sequence 3471: found in patent publication WO99/63088
CCCTTAGCGTGGTCGCGGCCGANGTACAGTGGGAGAGTGAGGTGGGAGAAGAAGAGTGTC
TGGTAGGTGTGCTCACTGTCTTCTTGGCTGANAATGT
Sequence 3472: found in patent publication WO99/64576
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTNTTTTTT
TTTTTTTTTTTTTAAAAAACTCGGNTTTTATACAATAAAATGTTTTNTAGCANATGCCT
NTTGTTTTAATATATTAAAATTTTGCAAANCCCTTTGAGCTACTGCCTTAGTNTACCCAC
TGNCNTTTTGTTATGNGGNAGAGGATNTNATGACNCCNTACACACAAACCCNT
Sequence 3473: found in patent publication WO99/04265
CCCTTAGCGTGGTCGCGGCCGAGGTACATGGGCAATGCTGGACGTAAAGAAAGAAGTGAT
GCACTCAATTCTGCAATAGATAAAATGACCAAGAAGACCAGGGACTTGCGTAGACAGCTC
CGCAAAGCTGTCATGGACCACGTTTCAGATTCTTTCCTGGAAACCAATGTTCCACTTTTG
GTATTGATTGAAGCTGCAAAGAATGGAAATGAGAAAGAAGTTAAGGAGTATGCCCAAGTT
TTCCGTGAACATGCCAACAAATTGATTGAGGTTGCCAACTTGGCCTGTTCCATCTCAAAT
AATGAAGAAGGTGTAAAGCTTGTTCGAATGTCTGCAAGCCAGTTAGAAGCCCTCTGTCCT
CAGGTTATTAATGCTGCACTGGCTTTAGCAGCAAAACCACAGAGTAAACTGGCCCAAGAG
AACATGGATCTTTTTAAAGACAATGGGAAAAACAAGTCCGTGTTCTCACAGATGCTGTCG
ATGACATTACTTCCATTG
Sequence 3474: found in patent publication WO99/57144
CCCTTAGCGTGGTCGCGGCCGAGGTACCAAGATTAACAAAAGCAGTGGCATTGTGGAGGC
ATCACGGATCATGAATTTATACCANTTTATTCAACTTTATAAAGATATCACAAGTCAAGC
AGCAGGAGTATTGGCACAGAGCTCCACCTCTGAAGAACCTGATGAAAACTCATCCTNTGT
AACATCTTGTCAGGCTATGTCTTTGGATGGGAAGGGTGAAGCAGCTGACCGATGAGGAGG
AGNGTNGTATCTGTATGGATGGGCGGGCTGACC
Sequence 3475: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTT
Sequence 3476: found in patent publication WO99/53940
CCCTTAGCGTGGTCGCGGCCGAGGTACCAAGGTGTGCTGAAGTGGAAGCAAAGTTCTCCA
AAGTCCAGCATGGTAGACATCAGTGGTGGTAACCAAGGACAGACCCCAAGGCAAGGTGAA
CCTCAAAAATGGAACCTCAAGTCTATGCAGTCCAGCTGCCCTCCCCACCAGAAAGTCCTT
GTTCCAGCCCAACATCANTGCCTCTGAGTTTGTTTACTAGAAACAAAGGAAGAATTTCCT
TGTAAAAATATAGACAGAGTAGTCCCTGGCTTTCTCCTCTTGCAGGAAGGATGGATTCTC
CCATTCCATACCATCTTTGCCCCACACTGGCCCCANGAAATACTTAATTCAACTNTGTGA
AAATAAAGATTGTTTTTGGTTTTGAGGGGCAAAAAAAAAAAAAAAAAA
Sequence 3477: found in patent publication WO99/06554
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGAGTGTCCAGCTGCGGAGACCCGTGA
TAATGGGGNAACTAATTCAACAAACGGGACCCTTCTGTGTGCCANAAACCGCAAGCAGTT
GCTAACCCAGTGGGACAGGCGGATTGGAAGAGCGGGAAGGTCCTGGCCCAGAGCAGTGTG
ACACTTCCCTCTGTGACCATGAAACTCTGGGTGTCTGCATTGCTGATGGCCTGGTTTGGT
GTCC
Sequence 3478: found in patent publication WO99/64576
ACTTTATTTTTTTTTTTTTTTTTTTTTTTNCTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTT
Sequence 3479: found in patent publication WO99/48916
CCCTTAGCGTGGTCGCGGCCGAGGTACCCGTTGGAATANCGGGTTTTGCAGCAATTGTTG

TABLE 8B

CATATGGATTATATAAACTGAAGAGCAGGGGAAATACTAAAATGTCCATTCATCTGATCC
ACATGCGTGTGGCAGCCCAAGGCTTTGTTGTAGGAGCAATGACTGTTGGTATGGGCTACT
CCATGTATCGGGAATTCTGGGCAAAACCTAANCCTTAGAAGAAGAGATGCTGTCTTGGTC
TTGTTGGAGGAGCTTGCTTTAGTTAGATGTCTTATTATTAAAGTTACCTATTATTGTTGG
AAAATAAACTAANTTTGTATGGGTTTAGATGGCAAAAAAAAAAAAAAAAAAAAAA
Sequence 3480: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTGAGTTCATGGGCATCTCTCCCGCCGCCTCTC
AGCCTATCTGCACCATGTCTCACACGTTCAGTTGCAGCTCTTCCGTTTTGAAGGCGCACG
TGGGCAAGAAGCCCTGGGCAGCACAAGAAAGTCAATCACGTTGAGACAGAGAGAGCAGGA
GAGGAAGTGGGCCCCAGTAGAAGTGGGCGAGAGAGCGTTGGGTGGAACGTGGCACGAGA
GAGAGAAATTATGAGATTGACAGAGAGAGAGAGAGAGAGAGAGAAAGAGAAAGAGAGAGA
GAAAGAGAAAGAGACAGAGAAAAGAAACTATGTTGTTTAAAATGCCAGTGGAAAGTCCAT
GGGGGTGAAAGAGTCCGGCAATGGCCAGGGAGTTTAGCAGCTTGGCGTAATGTCTTCCCA
CTGTTTTGTCTGTCTTGAGAATAGCATTCAACGCGACTGTGTTCCCGCANNCAGACGTTA
GGCCCGCTGCCCACGCCTTTGAGTCCCCGCGTACCTGCCCGGGCCGGCCGTTCG
Sequence 3481: found in patent publication WO99/64594
NGTGATGGATATCTGCANAATTCGCCCTTAGCGTGGTCGCGGCCGAGGTNC
Sequence 3482: found in patent publication WO98/39448
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGAATCTTCGACAGCTGGGCTGGAACGT
GAACTCAGTAGCTGAACCTGTCTGACCCGGTCACGTTCTTGGATCCTCAGAACTCTTTGC
TCTTGTCGGGGTGGGGGTGGGAACTCACGTGGGGAGCGGTGGCTGAGAAAATGTAAGGAT
TCTGGAATACATATTCCATGGGACTTTCCTTCCCTCTCCTGCTTCCTCTTTTCCTGCTCC
CTAACCTTTCGCCGAATGGGGCAGCACCACTGACGTTTCTGGGCGGCAGTGCGGCTGCCA
GGTTCCTGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3483: found in patent publication WO99/64594
CCCTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTT
Sequence 3484: found in patent publication WO99/64576
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTATT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTATTANCAACANACAAAAAAAGTTTAT
TGAATACAAAACTNAAAGGCNTNAACAGTCCTGGGCCCAAAAAATCCATGGCNGGAAGTC
AANANTTNTGCTTNAGGGNCGGCCTGGGCNGCCCTGGAAAAANTCATTGCNCATGANAGN
GATGAGNGCCAGGAAAACANCATNCTCCTGGAANTCCNCCTGNTGGNCACTGTTTTNATC
CAGGCTGCCCATTANCCTTTTNANCCC
Sequence 3485: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTCTTTTCTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTNTTTT
TTTTTTTAANAAAAAAAAANAAAAAANAAAAAAAAAAAAAAAANANNAAAAAAAAAAAAAANA
AAAAAAAAAAAAAAAAA
Sequence 3486: found in patent publication WO99/57144
CCCTTTCGAGCGGCCGCCCGGGCAGGTACATGAACAATGTCACAGAACTTTTTTAATTTT
TTGAATAATTATAAGTATCAGTAAAGGAAGTGAAAGACAGGATTGCATTTAATAGATAAA
ACGTTTAGGCAATAATTGAACAAAAGAATCCTGGCATATTTCTAACACTAATGGCAATTT
ACTTATGGTATTTATTTTCAGTAGTAAAGACCCAGCTTGAATGTAAATTTTGTATAGTGT
AAGTATGAAGAACATAGTGCAACTGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3487: found in patent publication WO99/47663
CCCTTAGCGNGGNCCCGGCCGANGTNCTGGGTCCAATTGCTGTGATCTCTTTTTGATCA
GCTGTAACTCCATATGTNGTATTTTTATTCTTACTAANAAGAAGTNAATTTTTCCANCAA
TCACATCCTTNAAATGATACTTNGATTTATTATATTCNAATCNTATANGTAGACAATCNT
CANTGCCCACTTC
Sequence 3488: found in patent publication WO99/04265
CCCTTTCGAGCGGCCGCCCGGGCAGGTACATGAACTCAGGGCCGGTTGTGGCCATGGTCT
GGGAGGGGCTGAACGTGGTGAAGACAGGCCGAGTGATGCTTGGGGAGACCAATCCAGCAG
ATTCAAAGCCAGGCACCATTCGTGGGGACTTCTGCATTCAGGTTGGCAGGAACATCATTC
ATGGCAGTGATTCAGTAAAAAGTGCTGAAAAAGAAATCAGCCTATGGTTTAAGCCTGAAG
AACTGGTTGACTACAAGTCTTGTGCTCATGACTGGGTCTATGAATAAGAGGTGGACACAA
CAGCAGTCTCCTTCAGCACGGCGTGGTG
Sequence 3489: found in patent publication WO99/54461

TABLE 8B

CCCTTGAGCGGCCGCCCGGGCAGGTACGCGGGATTTAGAAATGGTTTGCCTTAATGGAGA
CAATAGCAGATCCTGTAGTATTTCCAGTAGACATGGCCTTTTAATCTAAGGGCTTAAGAC
TGATTAGTCTTAGCATTTACTGTAGTTGGAGGATGGAGATGCTATGATGGAAGCATACCC
AGGGTGGCCTTTAGCACAGTATCAGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3490: found in patent publication WO99/55858
CCCTTAGCGTGGTCGCGGCCGAGGTACACAAGAGTTGTCTTAACAAGCTGCACAAACTCA
GGCCGAACTACGCAGCACACTGCTCCAGAAAAGTTAAACTGAAGGAAAAAAAGGGTCCAC
ATGAAGTAGGTCTCCTAATGCCACAGGTTAACTCTGTTGTTTCTCATGGAAAATTAAATT
CACTGGCCGCCCAGGACGTCNGTGGAATCCTGATCTCCTGG
Sequence 3491: found in patent publication WO99/53036
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTGCTGGGAAA
TTTAAATATTTATTTCAAAACCCCTAAAACACTGGAGTATGCTTCACCTAGAAACAGAT
TACAGGACGAATAGCTATAATGAATAAGCAATACAATTTGTATTTGGGATGCAATTGTGT
TGTAAAGTTTCAAATAATCAATTTATAAATTTGTTGCTTTTACTTTTACAAAAATATTCA
TTTAACCCATAACATGAGTTGCAAAATTATCTCCAGACTTCTACAGGTGATTATAAACTG
TAATT
Sequence 3492: found in patent publication WO99/55858
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTC
TATTTTNGTTNAATTTATTTAANACCACCTCCTTACAACTTCCAGAGAGAAAATNCAAAA
CAAGAAACAGACTTGGTTTCAAATGCATAACCAGGTGCTGGAGTTTAAAGCATTACTGAT
AACATTGTTACANAANAATGGCAGCTTACTCCAGGGCACTTCAGTATTCCTGAGGAATAA
ACATGATTTCTNTTGTCCTCCCGCTGGGATGTTCTCAGGTGAAGTCACTGCTCCTGC
Sequence 3493: found in patent publication WO99/46374
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTGGAATTA
AATTTTATTTCACATTGATAGAAACCATGAAAAACATTTACACTTTCCCATGTTACAGCA
CAATATTTCAATGGAATATTTCTTGCCATAAATAATATCTTGCTGATTTGTANAAGTGAA
ATAACAGTTTATGTTCTTCAAGGTAAAGAAAAATGACATAGTAAATGATTGTTTAAAATT
TTTAAATCCAGACATAAACATATGGCTTCATTATTAACATCCTGTATAGTCCATTACTAA
ATTATTTCCATTATCAATTAGCACCCATTTATAA
Sequence 3494: found in patent publication WO99/66041
CCCTTTCGAGCGGCCGCCCGGGCAGGTACACGTGCTAGGAAAAAACAGCTTCAGTGTCTT
TGTTTAATGTGTTGAAACTCATCTTTTTAAATCTTGAAAAGCCAATTGTTTACTTGAAAC
TTGAAAATAGCATATTTTTCTGTTTTTTGGTTGTTTGTTCATTTGTATTAGCACAATTTA
ATGTAATTCCTGGTTTGGAGGCAGCAAGACCTATGAGCAAGAACTATTTACTTGACCCTC
GTTTTTTTCTCTTGTTCTTGTGTGGTCTGAAATCTAAAACTAGACTTTATTATGATAGAT
TTCCTATAAGCCAATTTCTAATAACAAATA
Sequence 3495: found in patent publication WO9931117
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGATCCTGTTCTTGGTCCTGATGGGAA
GACGCATGGCAATAAGTGTGCAATGTGTGCTGAGCTGTTTTTAAAAGAAGCTGAAAATGC
CAAGCGAGAGGGTGAAACTAGAATTCGACGAAATGCTGAAAAGGATTTTTGCAAGGAATA
TGAAAAACAAGTGAGAAATGGAAGGCTTTTTTGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3496: found in patent publication WO99/10363
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTCCTTT
CTGAATATTTAATTAGGGCAAAACAAGATATTTGCATGGGATGCTTCTTAAGTCATCTNA
AGTAGTTCCCCTTCAGTTCTTAACATGCACTCTCAAAATCAACACACCTACCCCAACCCA
ATACTCATCGCTTCACAGTCATCCAGTAAAGTACCTCGGCCGCGACCACCCTAAGGG
Sequence 3497: found in patent publication WO98/39448
CCCTTAGCGTGGTCGCGGCCGAGGTACAGCAATATGCTGCGCTTAAGAGTTTAAGTCAAT
CCTACTTGTGTTGGCATCAGGTCCTTTAGGAGATGTAAAAACCCCTCCTTTCCCATTTGC
ACACGTCACAAACGATTCACACACAGGGCTGGGCTGGACAGCTGGCCACAGAGCCCAGCA
AGTCCTTCCTGGGAGAGAAGAGTTAGGGCTGATACTGAAGGTCTCTTTCACATCTGGGCA
CACGTCTGCCTTCAGGCTGTAAGAATTTCATTTGTCGATTGTTAAATAAAACCAGGAGAA
AGCAATGCAGGTC
Sequence 3498: found in patent publication WO99/64576
CCCTTNCCAGCGGCCGCCCNGNCGGGCACTGATTTTAAAAACTAATAACTTAAAACTGCC
ACACGCAAAAAAGAAAACCAAAGTGGTCCACAAAACATTCTCCTTTCCTTCTGAAGGTTT
TACGATGCATTGTTATCATTAACCAGTCTTTTACTACTAAACTTAAATGGCCAATTGAAA

TABLE 8B

CAAACAGTTCTGAGACCGTTCTTCCACCACTGATTAAGAGTGGGGTGGCAGGTATTAGGG
ATAATATTCATTTAGCCTTCTGAGCCTTCTGGGCAGACTTGGTGACCTTGCCAGCTCCAG
CAGCCTTCTTGTCCACTGCTTTGATG
Sequence 3499: found in patent publication WO99/55721
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTGGTTCCTAAAGCAAGNAACTTTATTATCATTCCTTTAAAAANAACCAAGGAAAATTC
ACAACATATGTGAAACACAAACAGCTGNGGTTTAGGAGGTAAACAAAGGACCAACATAGC
CCTGAAATGCAACAGCCTNTGAGTGACTTGANCCNCATGTGACTGGGGTTCTGTTAAAAG
GGCAGGCTCCTCCCTCCTAGCCCTGAAGCCCCAGGA
Sequence 3500: found in patent publication WO99/41390
NTTTTTTTTTTTTTTTTTTTNTTNTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3501: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTATTTTT
TTTATTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3502: found in patent publication WO98/39446
CCCTTAGCGTGGTCGCNGGCCGAGGTACTTTTTNTTTTTTTTTTTTTTTTTTTGGTTTT
NTTTTTTTTTTTTTTTTTTT
Sequence 3503: found in patent publication WO99/64594
CCCTTTCGAGCGGCCGCCCGGGCAGGTACAACATTCTGCTCAACCCCACAGGCTCCATTC
CCTTTACCACATATTTATAATATGTTTGGGTCACTCATAGGAGTGAAACACTGTCAGCAT
CAATAGTTAGCAGCACTTTCAAAATACATTTTATTGTCCCGAATAGAAACCTTAACTATT
CAATTAGTCCAGTAATTCCAAATGGTCTTATTACTTCTATACATAAGATATGATCTTACA
ACATTTATGTAGCTAAATACTTAACTTCCCATGCTTTTGAGGATTCCCAAAAGACTTTA
GGGGGTTCCCAAGACTTTCAGGGTTTTTTTTT
Sequence 3504: found in patent publication WO98/41539
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTNTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3505: found in patent publication WO98/30695
CCCTTTCGAGCGGCCGCCCGGGCAGGTACACAATCTTTTGCCTTTATTTCGTAAAGTTTT
ATACAGAAGAGAGAAGAGCATGTCTTTACTTGAAAAACTCTTGATCAAGAATTTGGGTGG
GAGAAAAGAAAGTGGGTTATCAAGGGTGATTTGAAATTTTCTGCAGCATTAAAGCTGGCG
CTTAATAAGAATAAGTAATAATAAAGAAATTTCTAACATTCAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAANGGTCCCTCGGCCGCGACCACNCTANGGG
Sequence 3506: found in patent publication WO99/64576
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTACATTATA
AAAGCATTTTATTGAACACATTCTGGAGGTAGTTAGAACCAAAACAAAATTTGGGATTGG
GGTGGGGATTCTGTTTTGATGATTTANATTTGGGAAAACTTTGGGTTCTCGTGTCAGCAG
GGGCCATGCTGTGGGAAACCTGAAGGCTGATTTGAAGCANAATATANAACTGCGGCACGG
GAGACCAGGGGCTGGGAATGGGGCTCTCCTGGGAACCAAANAATGTGGTTCTGCAATTGG
CTTGGTCT
Sequence 3507: found in patent publication WO98/55614
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTATTTTTTTTTTTTTTTTTCTTGGACAACC
AGCTATCACCAGGCTCGGTAGGTTTGTCGCCTCTACCTATAAATCTNNCCACTATTTTGN
TACATAGACGGGTGTGCTCTTTTTACTAGATCTTAGGTAGCTCGTCTGGTTTNGGGGGTC
TTAGCTTTGGCTCTCCTTGCAAAGTTA
Sequence 3508: found in patent publication WO99/64594
GATGGATATCTGCANAATTCGCCCTTAGCGTGGTCGCGGCCGAGGTACGTAGTNTAGACC
ATATGTGTTGGAGGTTGAGACTAGTANGGCTAGGCCCACCGNTNNTTTNNAAGCGGCAAA
GACTAGTATNGTAATAGGCACAATATTGGC
Sequence 3509: found in patent publication WO99/53040
CCCTTAGCGTGGTCGCGGCCGAGGTACTTNGTANAGATTGACTTCCTAAGCTACTTAAGA
CAACTTGCACCACTAAGCAAAAAAATGTACGAACCATTTGGAAAAATGAAATTTAGTNGT
TCCAAGTTTCAAAGAAATGTCAACATTTTATTCCATTCAATAAAGAACAAAACCAATNGT
GTTTTTATTACTTTCATCTGAAACATTCCATGTTTTAATCTGAGCCTTGCANACTTTCAT
TTGGAGTTTGAACCCGTTTTGGTTGCATTTCATTTTTGGAGAACTTAATTAACGTGAGAT
TGGCAATTGAAATGCAG

TABLE 8B

Sequence 3510: found in patent publication WO99/64576
CCCTTAGCGTGGTCGCGGCCGAGGTACACATTGTATTATATACAAACAAGCAACAACAAA
AAGTTTCATCATGTAAACAAAAGAATATAAATTATAGACATAATTGGAAGTTTCAAACAG
TCCTTAAATCATTGTGAGCTTCTCTAAAAGGCACAGGTCTTGGAGTGTGGCACAGAGCC
ATTAGTCAGATGTCTGGGTGGTCTCCCATAATAGCAATGTATACTCTTAAGTGGCTTTT
TGTGAACTCTGTCGGGGTGAATGAGTTAGGCCTCTTAAAGGAATGAAATGCTTTCACATT
TGGGGCAACAAGTGAAAAATACTGAAAG
Sequence 3511: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTNAAAT
TCCAACCANAAGCTAAATACAATTGGAAACTGGTAAGCACTANTTTTACTCCAAAGGAGT
AGGATCATTCAAATTTACTCCAATAAAAGTNTGCAACCCTTAANCAAAGCTTTTNTTCAT
TTAAAAGGANAAAAAAAAAAAACCTATNCAGTAGTCTTTCCTTATGTTCATTGCACAAAA
TGAGTTCTGNTTTTAAAACTTTGACACTCAATGGTTAATTTTACAATTNAANATTCCAAC
TTTATAACCT
Sequence 3512: found in patent publicatior WO99/64576
CGCCCTTAGCATGGTCGCGGCCGAGGTACAGAGATAGATGAATGGAAATGGGTAAGGGAG
GTGTTCATTCACATCCATCTAACTGCAAAATACAAAAGTAAGAAGTCATTGACATGAAGC
AACGACGACCAAGACGTTCTCAGATCTAAAGGTGAATGATCTCAGTCAGCCTGGAAATGC
ACAAGGTGGAAAAATAACATAAAAAAGCCATAAGACCTTGAAGAACATCAATGTCAAAGA
TAAATTCTAAGGTCCCAGAGAAAAAAGAATGGGAATCAAATTGACCTCAGACTATACGTG
AGAAACACGGAGAGCCAGA
Sequence 3513: found in patent publication WO99/61610
CCCTTACCAGCGGCCNCCCCGNCAGGNNCTCAGGGCCAAAGCGAGGCATNCTTACTGGCT
TACCTNCTAATGGCANCNTACTCTNCTNGANTGTATNANTANCCANNGTAAGGGGTNAAA
GGATNGTAAGCATAGAAACCACTAGAAAGTGGGCTNAATGNANTTCTTGTGGCCTNAGCT
CAATGCAGTTAGCTGAANAATTGAAAAGTTTTGTTTGGANACTTTTATAAACAGAAATG
GAAAGCAGAGTTTTCATTAAATCCTTTTACCTTTTTTTTCTTGGTAATCC
Sequence 3514: found in patent publication WO99/24836
CCCTTTGAGCGGCCGCCCGGGCAGGTACAAAATGTATAAGATTAATTTTCTATGTTAGGA
CCATTTGTTTTCACCAATTCCATAGAGCTCCAATGTGTAAAAGAAGACACTGATCTAACT
CTTGTGTTAAATATTTAGTAACTCATTTATCTGGAAGAAAGCAAAACAAAACAAAAATAC
AAGGAATAAAAATCACTGGGAGTGCTTTTCATTCACTGAATAATGAGTTTTGCAAGGAGC
ACGTGGATGGTGACATTATATCTTTTACATCTTTATTTTCTGTTTCTTTTTTGACTCCTT
ATCAGTGAATTTATCTT
Sequence 3515: found in patent publication WO99/46374
CCCTTAGCGTGGTCGCGGCCCGAGGTACTGCCACCAGATTTTTATTACATCATTTGAAA
ATTAGCAGTATGCTTAATGAAAATTTGTTCANGTATAAATGAGCAGTTAANATATAAACA
ATTTATGCATGCTGTGACTTANTCTATGGATTTATTCCAAAATTGCTTAATCACCATGCA
GTGTCTGTATTTTTATATATGTGTTCATATATACATAATGATTATAATACATAATAAGAA
TGAGGTGGTATTACATTATTCCTAATAATAGGGATAATGCTGTTTATTGTCAAAGAAAAA
AGTAAAATCGTTCTCTTCAATTAATGGCCCTTTTATTTTGGGACCANGCTTTTATTTTCC
CTGATATTATTTCTATTTAATACTCTTTTCTCTCANGGAAAAAANNNATANAANNNNNTN
TGAAAAGTCCTGCC
Sequence 3516: found in patent publication WO98/54963
CCCTTAGCGTGGTCGCGGCCGAGGTACTGGAAACAAAAATAAAGTTTTCTACATTATTTT
CAGCCTTGGGTTATGGTATAGTTTCTTTGTGTTTGTCGTAATATGCACATTGTCCTTCTA
GGACCTGTCACCCCACCATGGAGAAAAGAGTCTTTTGGTTCTTTTTAACATAAGTGATTA
GTTTAAGAGTATGCTGAGGAGCCACTGGGCTTAAAGAAGGATGTAAATAAGACCCAAATA
CATAGGGACCAGGCGCTGCTTTCTCATGTTCACAAAAGCAGTCCTCCACCACTGAAC
Sequence 3517: found in patent publication WO99/64576
CCCTTTCGAGCGGCCGCCCGGCAGGTACGCGGGGATCTTGTTGAAGTCAATCCTCAGTTG
GCCACCTCAGAGGAAGAGGCGAAGACTACAGCTAACCTGGCAGTAGATGTGATTGCTTCA
AGCTTTGGTCAGACAAGAGAAGGAGGGCATATTGTCTATGACCAACTTCCTACTCCCAGT
TCACCAGATGAATCAGAAAATCAAGCACGTGTGANAATTTAGGAGACACTGTGCACTGAC
ATGTTTCACAACAGGCATTCCANAATTATGAGGCATTGAGGGGATAGATNAATACTNAAT
GGTTGTCTGGGTCAATACTGCC
Sequence 3518: found in patent publication WO99/64594

TABLE 8B

NGAGCGGCCGCCATNTGTGATGGATATCTGCANAATTCGCCCTTCGAGCGGCC
Sequence 3519: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTNNNNTTTTTTTTTCTT
Sequence 3520: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTCTTTGGGGNTTTTTTTTT
Sequence 3521 found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGNACTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3522:found in patent publication WO99/28334
CCCTTTCGAGCGGCCGCCCGGGCAGGTACAGATCCTGGAAGGACAAAAGATCCTGGCTAA
CTGTTCTTCTCCCTACCAGGTAGACCTGTTTGGTATAGCAGATTTAGCACATTTACTATT
GTTCAAGGAACACCTACAGGTCTTCTGGGATGGGTCCTTCTGGAAACTTAGCCAAAATAT
TTCTGAGCTAAAAGATGGTGAATTGTGGAATAAATTCTTTGTGCGGATTCTGAATGCCAA
TGATGAGGCCACAGTGTCTGTTCTTGGGGAGCTTGCAGCAGAAATGAATGGGGGTTTTTG
ACACTACATTCCAAAAGTCACCTTGAACAAAAGCCTTAT
Sequence 3523: found in patent publication WO99/35158
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGAATTTGGTCAGGCTCTCTTCACTGGCTGGG
CTGCTGCTTCTCTCTGCCTTCTGGGAGGTGCCCTACTTTGCTGTTCCTGTCCCCGAAAAA
CAACCTCTTACCCAACACCAAGGCCCTATCCAAAACCTGCACCTTCCAGCGGGAAAGACT
ACGTGTGACACAGAGGCAAAAGGAGAAAATCATGTTGAAACAAACCGAAAATGGACATTG
AGATACTATCATTAACATTAGGACCTTAGAATTTTGGGTATTGGAAATCTTGAAGTATGG
GTATTTCNAAAACAAACAAACAAAACAAAAAAAACCCNTGTGTTAAAAATACTTCNANGTG
CNTAAACAATGGGCTTTAAATCTTATTTTTTTAAT
Sequence 3524: found in patent publication WO99/11293
CCCTTTGAGCGGCCGCCCGGGCAGGTACGCGGGCCCTTGGACCACCTTCATGTTAGTTGG
GTATTATAAATAAGAGATACAACCATGAATATATTATGTTTATACAAAATCAATCTGAAC
ACAATTCATAAAGATTTCTCTTTTATACCTTCCTCACTGGCCCCCTCCACCTGCCCATAG
TCACCAAATTCTGTTTTAAATCAATGACCTAAGATCAACAATGAAGTATTTTATAAATGT
ATTTATGCTGCTAGACTGTGGGTCAAATGTTTCCATTTTCAAATTATTTAGAATTCTTAT
GAGTTTAAAATTTGTAAATTTCTAAATCCAATCAT
Sequence 3525: found in patent publication WO99/46375
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTCTTTTTTTTTCTTAATTA
CGCATTTTAAATATCAATATGTGCATTTGTTTTTACAGTTATAAATTTTTTTCTCACCTG
TTTTAGACAACAGCTTGTAATAGTTTTGAATCCATTAAGATGTTGCTTTCAATTTGAAAT
ATTTTGTGTATACATGTATATAAAAAATAACCCAATGTATGACTCATCTGACCGATGTTT
AAGATCAATAACGGCTTATTTTTCAACATGCAGTTAGGAAGAGAGGGAAGCAAACCAACC
TNTNTACAGTATCTTTTTGCTGGCTTGTTT
Sequence 3526: found in patent publication WO99/64594
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3527: found in patent publication WO99/64584
CCCTTAGCGTGGTCGCGGCCGAGGTACACTATTAGTGGGAAAGTAAATTAGTATAGTTGC
TATGGAGAATAGGATGGAGTTTCCTCAAGTAAACTAATTATTGNAATTACCATATGATTG
AACAATCACATGGCTGGATATATATCTAAAAGAAAGAAAATCAGTATATTTGAAGAGATA
CCTGCACTCTCATGTTTATTGCAGCACTGTTCACAGTAGTCAAAGGTTTTATGAAGCCAC
ATAGCCTTGTTAGTAAGCTCAAGAGTACCTGCCCGGGCGGCCGCTCGAAAGGG
Sequence 3528: found in patent publication WO99/64594
CCCTTAGCNTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTACTTT
Sequence 3529: found in patent publication WO98/39448
CCCTTAGCGTGGTCGCGGCCGAGGTACTGTGGGAAGGGGAGTTGGGCACTCTTGGAGGAC
TCCTGCTGAAGGTGGTCAGCCTGCCTGACAATGGAAGACATACTTGAATGGGGAGCAGGG
TATGTGCTTTCATATGAAAAAAGAGCTGATGTTAAAACTCATTTGGTGAGGTCAACGTTG
TCACATACCTTNACATAAGGGATAGTATATTTGGGTTGCAGTCAAACTTGTGCTCAGAC
TGGTGAAACTGNGAGTCAGGCTTTTACATTTTTAANAGAAAATACAGTTTTTTCA
Sequence 3530: found in patent publication WO99/64594
CGGCCGCCAGTGTGATGGGATATCTGCAGAATTCGCCCTTAGCGTGGTCGCGGCCCGAGG
TACTTTTTTTTTTTT
Sequence 3531: found in patent publication WO00/00610
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTGAAAATCTTACGGAGAGTTAAAAATAATAC

TAATCCTCGCCCGGCTGAACTGGAATTCTTGCAGTTACAAAGTTAAAATTTCAAGTAAAC
ACTGTATTTTTCACTTTTTGTAGACAGACACAGTGCAGATACAAACAGCTGCCATATCTC
ACCTCAGATGAAGCTATGTGTCAATGCTTAGGGAAAATGATCTTAGATAATTTCCCAATT
TTATAGAGCTTAAATCTTTGAAAACAGCACTAATACTGCTGGTTGACTGGCTATCTACAA
CAGCAAAGTGAACATAAAGTTTTGACGATGAGAGGTTTCCCAAAGAAACTAATATA
Sequence 3532: found in patent publication WO99/64594
GTGTGATGGATATCAAGCAGAATTCGCCCTTGAGCGGCCGCCCGGGCAGGTACTTTT
Sequence 3533: found in patent publication WO99/63069
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTGCTCTGTT
TTATAAATACATGTGTTCAAACAATCTTGATTAGGAGCATTTTAATCACGAAGCCAACAC
ATGTTACTGCGTATCTGTTTAAAATCTGGTAGTTGCTTAATGGGACCAACAGCAGCAATA
GCTGGACTCCTATTATAAATGTATTTGGTACCTGCCCGGGCGGCCGNTCNAAAGGGCN
Sequence 3534: found in patent publication WO98/31815
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGGTTCTGAAGCGGCGGCCAGAGAAGA
GTCAAGGGCACGAGCATCGGCCATGCCTTTCTTGGACATCCAGAAAAGGTTCGGCCTTAA
CATAGATCGATGGTTGACAATCCAGAGTGGTGAACAGCCCTACAAGATGGCTGGTCGATG
CCATGCTTTTGAAAAAGAATGGATAGAATGTGCACATGGAATCGGTTATACTCGGGCAGA
GAAAGAGTGCAAGATAGAATATGATGATTTCGTAGAGTGTTTGCTTCGGCAGAAAACGAT
GAGACGTGCAGGTACCTCGGC
Sequence 3535: found in patent publication WO99/64594
GATATCTGCAGAATTCGCCCTTAGCGTGGTCGCGGCCCGAGGT
Sequence 3536: found in patent publication WO99/53040
CCCTTTGAGCGGCCGCCCGGGCAGGTACGCGGGTCCAATGAGGAGAGGAATCTTCTCTCA
GTTGCTTATAAAAATGTTGTAGGAGCCCGTAGGTCATCTTGGAGGGTCGTCTCAAGTATT
GAACAAAAGACGGAAGGTGCTGAGAAAAAACAGCAGATGGCTCGAGAATACAGAGAGAAA
ATTGAGACGGAGCTAAGAGATATCTGCAATGATGTACCTCGGCCGCGACCACGCTAAGGG

Sequence 3537: found in patent publication WO99/53036
CCCTTTCGAGCGGCCGCCCGGGCAGGTACCATGATAGAATACTGCAATTGTGGTCAGAAT
TACAGTATGCACAAAGAATTAATTAGCATTATTAAAGAGTCCTCACTAAACATTTCATAT
GATCACACTGAAGAACTGTAACATTCCATAGAGTGAAGTGGTTCAAATTTCTCTTGGAAT
TTTTACTTTTGTTGGCCTTATTTTATGATCCTTTTCATATTTCTTTTGACTTAGAGTATT
AATACATGGCCAAAATAATTTAGTTACTACCTCATACAAACAATATAATGGTTACTACAC
ATCACAGGAACTTAGTTTTGGTTTAA
Sequence 3538: found in patent publication WO99/54353
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTCCC
ATNCAACTTAAATNCTTTTATTGACAATGTTTTGGAACAATAANCAAACAATGCTTANAT
TTTTNATTNAAATTNACTTTCCACATNTNATAANACCTTAAGGTNAAAAAAAATAAAAAN
AAAAANNAAATATNTGAGAATCCATTTNATTAAATAA
Sequence 3539: found in patent publication WO99/64594
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTGNTTTTTT
TTNTTTTTTTTTTTTTTT
Sequence 3540: found in patent publication WO99/03990
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGGGGGTCGACTGACGGTAACGGGGCA
GAGAGGCTGTTCGCAGAGCTGCGGAAGATGAATGCCAGAGGACTTGGATCTGAGCTAAAG
GACAGTATTCCAGTTACTGAACTTTCAGCAAGTGGGCCTTTTGAAAGTCATGATCTTCTT
CGGAAAGGTTTTTCTTGTGTGAAAAATGAACTTTTGCCTAGTCATCCCCTTGAATTATCA
GAAAAAAATTTCCAGCTCAACCAAGATAAAATGAATTTTTCCACACTGAGAAACATTCAG
GGTCTATTTGCTCCGCTAAAATTACAGATGGAATTCAAGGCAGTGCAGCAGGTTCAGCGT
CTTCCAT
Sequence 3541: found in patent publication WO99/64594
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTT
Sequence 3542: found in patent publication WO99/03990
CCCTTAGCGTGGTCGCGGCCGAGGTACAAAAGGCCAAAAAAAAAAAAAAAGTCCCAAAAC
ACCAAGAGACAAAAGGTAGGAGGAAAGACAAGAAAGGAAGATACAAAAGGAGCAGGAAGA
AACTTACTTAGGGACAAGATTAGCA

TABLE 8B

Sequence 3543: found in patent publication WO99/64594
CCTCTACATGCATGCTCGAGCGGCCCCATTGTNATGGATATCTGCANAATTCTC
Sequence 3544: found in patent publication WO99/64594
CCCTTAGCGTGGTCGNTNTCGAGGTNCTTTTTTTTTTTTTTTTTTTGNTTTTTTTTTG
NTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3545: found in patent publication WO99/57132
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTGGGTNT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTGGNAAAAAAAAATAAANTTTTNNTTTTTT
Sequence 3546: found in patent publication WO99/03990
CCCTTAGCGTGGTCGCGGCCGAGGTACGCGGGGAAACGGAAGTGAGCGGCGGGGTCGAC
TGACGGTAACGGGGCAGAGAGGCTGTTCGCAGAGCTGCGGAAGATGAATGCCAGAGGACT
TGGATCTGAGCTAAAGGACAGTATTCCAGTTACTGAACTTTCAGCAAGTGGACCTTTTGA
AAGTCATGATCTTCTTCGGAAAGGTTTTTCTTGTGTGAAAAATGAACTTTTGCCTAGTCA
TCCCCTTGAATTATCAGAAAAAAATTTCCAGCTCAACCAAGATAAAATGAATTTTTCCAC
ACTGAGAAACATTCAGGGTCTATTTGCTCCGCTAAAATTACAGATGGAATTCAAGGCAGT
GCAGCAGGTTCAGCGTCTTCCATTTCTTTCAAGCTCAAATCTTTCACTGGATGTTTTGAG
GGGTAATGATGAGACTATTGGATTTGAGGATATTCTTAATGATCCATCACAAAGCGAAGT
CATGGGAGAGCCACACTTGATGGTGGAATATAAACTTGGTTTACTGTAATAAGTGTGCTG
NTCATGGAAACCGAAGGGCTGCATCTTGTTTATAGTCATCTTTGTCCTGCCCGGGCC
Sequence 3547: found in patent publication WO99/54448
CCCTTAGCGTGGTCGCGGCCGAGGTACAGTTTGAAATACTATTTTTTATCAAGTTTTATA
AAAATGCAGAATTTTGTTTTACATTTTTTTTTTTTTAAAAGCTATGTTGTTAGCACACA
GAACACTTCATTGTTGTTTTGGGGGAAGGGGCATATGTCACTAATAGAATGTCTCCAAA
GCTGGATTGATGTGGAGAAAACACCTTTCCCTTCTAGTTTTGAGAGACTTCCTCTTGGCT
CCCAGGAGGAGGGATTCCCTGACTTTGACACACATGGCCACCTTGGCACAAAAGCCTTGT
GGTATAGAAAAACAAATTTGTTTTTATGTCCTCTTCTCCCTTTCCATCTTTCAGCATAGA
CTTAACTCCCATAAGCCCAGACATCTGTTGAGACCTGACCCCTAGTCATTGGTTACCAGT
GTGTCAGGCAATCTGGACTTTCCAGTGATGCCACTGAGATGGCACCTGTCAAAAGAGCAG
TGGTTCCATTTCTAGATTGNGGATCTTCANATAAATTCTGCCATTTTCATTTCACTTCCT
GAAAGTCAGGGTCGGCTT
Sequence 3548: found in patent publication WO98/33916
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTGTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTNCNNAAAAAAANTTNAAAANTTTNNNAAAACCNNNAAAA
AAAAAAAAAAAAAAAAANGGGAAAAAAAAAAAGGGGGGGAAAAAAAAAAAAAAAAAAAT
NGGGGNCCCNGGGGGG
Sequence 3549: found in patent publication WO99/54460
CCCTTCGAGCGGCCGCCCGGGCAGGTACTAATTTTGTTTCTTTATATAGTTTGCGTTTGA
TATTAGTGCTTGCAATTGTATTAAAGTCAAAAGCTGATTTTTATGGCATACACAAGAATG
CCACTTTTTCTTTTATTTCATACCAATAATTTAAAGATTGATATGCTAAAAACAATTTGC
ACAGCACTAAAGCATGAGCTACTTTCATCTAAACCTGTAAAAATATGAAAGATTTTTATA
TTTTTTCACTGGGAAGAAATTCTTCCTGGATGAAATTACAAATATGTGTAGAATATATTT
AATAAAAGACTTATAAAATACCTAACTACAGGACTTAAAATATAGATTGGCGCGTAGTAT
ATAGAACAATATTCCATATAAATAAGTTTAGCCTTTATAAAAATGAAGTTGCAGGCTGAC
ATTACATTCTGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3550: found in patent publication WO99/51727
CGGCCGCCCGGGCAGGTACGCGGGGAGCTACAAGTTTAGCAACTCGGGGAGCAGAATCAC
CTGTGCAAAACAGGACTCCTGCAGAAGTCAACTGTGTGAGTGAGATAAGGCTGCTGCCAC
CTGTTTTGCTAGAAACANGACGACCTACAATAAAAAGTACCTTGGCCGCTCTAG
Sequence 3551: found in patent publication WO00/00608
CCCTTAGCGTGGTCGCGGNTCGAGGTNCCTCAAAACACTGGAATGAAAAATGAAAAAACA
GCCAACAGGGAANAGTGTCGCACCCAGGAGAAAGTTAATGCAACAGGACCACAGTTCGTG
AGTGGAGTGATTGTGAAGATCATTAGCACAGAGCCTCTACCTGGCAGGAAACAAGTCCGG
GATACTTTGGCAGCAATCTCAGAAGTTCTTTATGTTGATTTGCTAGAAGGGGATACAGAA
TGCCATGCTAGATTTAAAACTCCTGAGGATGCTCAAGCAGTAATAAATGCCTATACANAA
ATTTACATTGAAACACTTGCTGGAAACTCNAGATCCTTTTNTGGTGATCACGAACAAAGG

TABLE 8B

TATTGGCAGAAGATTTT
Sequence 3552: found in patent publication WO99/53040
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGGCATTCTGGAATAAAGCAAGAGTGTTCATT
CACACACACAGTAGCTTCAAAACTGTTCGATCTGTTTGTTCCCATGTAGTTTCTAAAGA
TGGAAAAAAAGGACTTTGGTCATCAAGACTACTGTGGCCATATTAGATTACTGGAACATC
TAAGCATCAGTGTGTGACCATGCGAACAAAAGACTTCGGGGAGTGTCTATTTTTAAAAAG
GTTTATGTGTGTCGAGGCAGTTGTAAAAGATTTACTGCAGAATCAAGCCCACTTTTAGGC
TTAGGACCAGGTTCTAACTATCTAAAAATATTGACTGATAACAAAAAGTGTTCTAAATGT
GCCCGCGTACCTCGGCCCGCGACCACGCTAAGGG
Sequence 3553: found in patent publication WO99/64576
CCCTTTCGAGCGGCCCGCCCGGGCAGGTACGCGGGGAGGCATTGAGGCAGCCAGCGCAGG
GGCTTCTGCTGAGGGGGCAGGCGGAGCTTGAGGAAACCGCAGATAAGTTTTTTCTCTTTG
AAAGATAGAGATTAATACAACTACTTAAAAAATATAGTCAATAGGTTACTAAGATATTGC
TTAGCGTTAAGTTTTTAACGTAATTTTAATAGCTTAAGATTTTAAGAGAAAATATGAAGA
CTTANAAGAGTAGCATGAGGAAGGAAAAGATAAAAGGTTTCTAAAACATGACGGAGGTTG
AGATGAAGCTTCTTCATGGAGTAAAAAATGTATTTAAAAGAAAATTGGGAGAAGGGACTA
CAGAGCCCCGAATTAATACCAATAGAAGGGCAATGCTTTTAGATTAAAATGAAGGTGACT
TAAACAGCTTAAAGTTTAGTTTAAAAGGTTGTAGGTGATTAAAATAATTTGAAGGCGATC
TTTTAAAA
Sequence 3554: found in patent publication WO99/54461
ATGGATATCTGCAGAATTCGCCCTTTCGAGCGGCCGCCCGGGCAGGTACGCTGCTTGGAC
TTATTTTCTAATGCAGCCCACTGGGCTTCAAAAGGATCCACTGGGCAGGTGCCTGTAGGA
ACCTCTGTATGCCTGTCTGCTGAGGCCAACCTGCCATCATCTACACCATTGAAAGCTGCA
GAACCGTTGAGGTGCTGAGCAGGAGGCTTAAAGAAGGGGCTGGT
Sequence 3555: found in patent publication WO99/46375
AGCGGCCGCCCGGNCAGGTNCATACTATTCTGCACTTTTCCACCAAAAGCANTGGTGTGN
NATGCTTGTTATATAAAAAAAGTTATATCCTGTGGCAGGAAAAACCCTTNCTCTTTCACT
TTTACTAAACAACTGGAGAAAATGTTCAAGTCTGTATAAAGTTGCCTATAAGCTGGAAAG
TGAACTTGTTCAATCTNCATTTACATTTNANNGCATTTTTTGACAATTGTCACATTTTTA
ACAAAAGTAAGAAAATGCATATAGCACTAAAGAGTGTTTCATCAAATGCTTAAGGGAT
Sequence 3556: found in patent publication WO98/14596A
CGACCACGCGTCCGCNCAACCCACCAACGCCACGCTCAGCACCTTCATTGAGGACCTGAA
GAAGTACGGGGCTACCACTGTGGTGCGTGTGTGTGAAGTGACCTATGACAAAACGCCGCT
GGAGAAGGATGGCATCACCGTTGTGGACTGGCCGTTTGACGATGGGGCGCCCCCGCCCGG
CAAGGTAGTGGAAGACTGGCTGANCCTGGTGAAGGCCAAGTTCTGTGAGGCCCCCGNCAG
CTGCGTGGCTGTGCACTGCGTGGCGGGCCTG
Sequence 3557: found in patent publication WO99/04265
TCGCCCCGCGTCCGGACCCCAAACTTAAACATACTGAGAATCTTTCAGCNCGCCCTGGAG
GGAGGGCCAGCGTGGACACCAANGAGGCTGANGGCGCCCCCCAGGTGGA
Sequence 3558: found in patent publication WO99/53040
CGCCCCGCGTCCGTTCTTTTGTCTATTTGCTGTTGATTGTACCAAGGGATGGAAGAAGTA
AATATAGCTCAGGTAGCACTTTATACTCAGGCAGATCTCAGCCCTCTACTGAGTCCCTTA
GCCAAGCAGTTTCTTTCAAAGAAGCCAGCAGGCGAAAAGCAGGGACTGCCACTGCATTTC
ATATCACACTGTTAAAAGTTGTGTTTTGAAATTTTATGTTTAGTTGCACAAATTGGGCCA
AAGAAACATTGCCTTGAGGAAGATATGATTGGAAAATCAAGAGTGTAGAAGAATAAATAC
TGTTTTACTGTCCAAAGACATGTTTATAGTGCTCTGTAAATGTTCCTTTCCTTTGTAGTC
TCTGGCAAGATGCTTTAGGAAGATAAAAGTTTGAGGAGAACAAACAGGAATTCTGAATTA
AGCACAAGAGTTGAAGTTTATACCCGTTCACATGCTTTTCAAGAATGTCNCAATTACTAA
GAAGCAGATAATGGTGTTTTTTTAGAAACCTAATTGAAGTATATTCAACCCAAATACTTT
AATGTATAAAATAAAATATTATNCCAATATACCTTGTATGCAAGTTTCTGNTTTACATTT
TGATTTTTTNCAAAT
Sequence 3559: found in patent publication WO99/46375
CCCTTTCGAGCGGCCGCCCGGGCAGGTACATACTATTCTGCACTTTTCCACCAAAAGCAG
TGGTGTGTTATGCTTGTTATATAAAAAAAGTTATATCCTGTGGCAGGAAAAACCCTTTCT
CTTTCACTTTTACTAAACAACTGGAGAAAATGTTCAAGTCTGTATAAAGTTGCCTATAAG
CTGGAAAGTGAACTTGTTCAATCTCCATTTACATTTTAGTGCATTTTTTGACAATTGTCA
CATTTTTAACAAAAGTAAGAAAATGCATATAGCACTAAAGAGTGTTTCATCAAATGCTTA

TABLE 8B

AGGGATTAAAAAATATGGAGCAGAGAACAAAATCATTGTGAATGGATGAACTGTTGTAAA
ATGAAAAAAGTCCAGGCAAAGTTGTTACAAGTCTTTTGTCACTTTGATGAGTCACAGAAA
ATGAACTTTGGATACCTGTCCACTTTAAGGGTTTTTTCCTTAATCTTTTGC
Sequence 3560: found in patent publication WO99/21994
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGGACTATATTCTGGAGTCTATGCCT
CATACCCACATTCAGTGGTTTAGCATTATGAATTCCCTGGTCATTGTTCTCTTCTTATCT
GGAATGGTAGCTATGATTATGTTACGGACACTGCACAAAGATATTGCTAGATATAATCAG
ATGGACTCTACGGAAGATGCCCAGGAAGAATTTGGCTGGAAACTTGTTCATGGTGATATG
TTCCGTCCTCCAAGAAAAGGGATGCTGCTATCAGTCTTTCTAGGATCCGGGACACAGATT
TTAATTATGACCTTTGTGACTCTATTTTTCGCTT
Sequence 3561: found in patent publication WO98/25957
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCAGGGATCATAGGCTGTTTTAAGTTAGAAA
ACTGAATAGCAACACTGAATACTGTAGAAATGCACTTTGCTCAGTAATACTTGAGTTGTT
GCAATATTTGATTATCCATTTGGTTGTTACAGAAAAATTCTTAACTGTAATTGATGGTTG
TTGCCGTAATAGTATATTGCCTGTATTTCTACCTCTAGTAATGGGCTTTATGTGCTAGAT
TTTAATATCCTTGAGCCTGGGCAAGTGCACAAGTCTTTTTAAAAGAAACATGGTTTACTT
GCACAAAACTGATCAGTTTTGAGAGATCGTTAATGCCCTTGAAGTGGT
Sequence 3562: found in patent publication WO99/47669
CCCTTAGCGTGGTCGCGGCCGAGGTACTGCCAGATTCGTCTAAATGTCTGTCATGTCCAG
ATTTACTTTGCTTCTGTTACTGCCAGAGTTACTAGAGATATCATAATAGGATAAGAAGAC
CCTCATATGACCTGCACAGCTCATTTTCCTTCTGAAAGAAACTACTACCTAGGAGAATCT
AAGCTATAGCAGGGATGATTTATGCAAATTTGAACTAGCTTCTTTGTTCACAATTCAGTT
CCTCCCAACCAACCAGCCTTCACTTCAAGAGGGCCACACTGCAACCTCAGCTTAACATGA
ATAACAAAGACTGGCTCAGGAGCAGGGCT
Sequence 3563: found in patent publication WO99/54461
CCCTTAGCGTGGTCGCGGCCGAGGTACAAATGTCAAAGAGAAGTATTATTGCATCTAGTA
AACCTAAGACACAGAGACACGGATATACTATACTCCAGAAAATCACAATATCTACCTCAA
AGGTGACTAGAAGAAAGACCAAGGGTATTTATTAAAAAACATTTTTCTTTAATCTGGAAT
TGTCACATGTTCCAGAGAAGAGAGGGAGAACCCAAACCCACAGGCCTGCCACCTATCAGC
TAAGAGGCATCTGTGCAGATCTTTATCATAATACTTTCCTCAGGTTATTTCCAAATCCAA
TTTAATGGATATTCAACTGACACTCAAGAGTCAGCTTTAAAAGGACTATA
Sequence 3564: found in patent publication WO99/57132
CCCTTAGCGTGGTCGCGGCCGAGGTACTAAGAAGAACATGAAACTGTTTCCGTCTCAATT
CCAGCTTATCTTCAACACTTTCTTTAATGTGTGAAAGATGCTCTAATTCTTTTCCCAGAG
CCTCTAGTTCCTTTAATGTCTCATGCCTGTCTGGATGGTGCTGAATCACTTTTGCCAAAG
CATCATATTCTTGGCGATTTTTTCGTATTCGTTTTGCTTGAAGAATTTGCTTTTTGCACT
CAGCAATTTTTTCATGTGCTCCAGCTATGCTACATTCTATTTCCTTGTAAATTTTTTCAT
AATTTTCCATTTCTCTGAGATTCATATCATATACTA
Sequence 3565: found in patent publication WO99/01465
CCCTTAGCGTGGTCGCGGCGAGGTACCCAACACTACGTTGAAGTATTCTTTTATCCCTGC
CACAACTTCATTAACCGCATACTCCTTATTATCTGTGTTTCCACGAGATTTCTTGTAATT
TGCATAATCCTCAAGAATGGAATCCACATTCTTCTTGGCAGGAAGATAAAAGAGCTGTTT
TTGCCTGGTAATTAAGTCCCAGTCATCAACAAGCCACGGTTTTAGCTCTTCCCCGCGTAC
CTGCCCGGGCGGCCGCTCGAAAGGG
Sequence 3566: found in patent publication WO98/56804
CCCTTTCGAGCGGCCGCCCGGGCAGGTACAAATTGAGCTCTCTATTCATAACCTCAATGT
ATGTATTCCTGCTCATTAATATACTTTGCACCAGCAAAAGCGATTTCCAACATATGTGTT
TTGGAGGTAATTAAGTAACTCTGTATAAAAATAAATGCACTTTTCCCTCCTTTCCCCAGT
GAATGGAAAACTTCCATACTTTCAAAATAATAATAAAAAAAATAATTTTTAAGAGCAACA
GCCCTCAACTCTTTGCTGGTGCCTGCCATACTGCCTTTCTTCACTCCATTCTTAGCTCTG
CTAGTTTCTTCTTGTATGTCATGATAAAAAG
Sequence 3567: found in patent publication WO99/21980
CCCTTAGCGTGGTCGCGGCCGAGGTACCTNCCTTTGCCAAGCCATNCTGGATGAAACCAA
AGGAGATTATGAGAAAATCCTGGTGGCTCTTTGTGGAGGAAACTAAACATTCCCTTGATG
GTCTCAAGCTATGATCAGAAGACTTTAATTATATATTTTCATCCTATAAGCTTAAATAGG
AAAGTTTNTTNANCAGGATTGCANNGNAGCTACCTACATGCTGAAAAATATAGCCTTTAA
ATCATTNNTATATTATAACTCTGTATAATAGAGATAAGTCCATTTTTTAAAAATGTTTTC

CCCAAACCAT
Sequence 3568: found in patent publication WO99/58660
CCCTTTCGAGCGGCCGCCCGGGCAGGTACCTCTTGGAAAACCTCAATGCAAGATAGTGTT
TCAGTGCTGGCATATTTTGGAATTCTGCACATTCATGGAGTGCAATAATACTGTATAGCT
TTCCCCACCTCCCACAAAATCACCCAGTTAATGTGTGTGTGTGTTTTTTTTTTAAGGTAA
ACATTACTACTTGTAACTTTTTTTCTTAGTCATATTTGAAAAAGTAGAAAATTGAGTTAC
AATTTGATTTTTTTTCCAAAGATGTCTGTTAAATCTGTTGTGCTTTTATATGAATATTTG
TTTTTTATAGTTTAAAATTGATCCTTTGGG
Sequence 3569: found in patent publication WO98/39446
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3570: found in patent publication WO99/22243
CCCTTAGCGNGGTCGCCNNCGNAGNACCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3571: found in patent publication WO99/63088
CCCTTAGCGGCCGCCCGGGCAGGTACAATGGTCTTCCACACTAGAGACAAAGGCAATGAG
GTGAACGCAGAACGGATGAAGCTCTTACACCAAGTGTCACGAGTCTGGAGAACAGATGGG
TTGAGTAGTTGTTCTTATAAATTAGTATCTGTGGAACACAATCCTTTATATATCAACATC
ACAGCGGATTTCTGGTTTGGTGCATGACCCTGGATCTTTTGGTGATGTTTGGAAGAACTG
ATTCTTTGTTTGCAATAATTTTGGCCTAGAGACTTCAAATAGTAGCACACATTAAGAACC
TGTTACAGCTCATTGTTGAGCTGAATTTTCCCTTTTTGTATTTTCTTAGCAGAGCTCCTG
GTGATGTAGAGTATAAAACAGTTGTAACAAGACAGCTTTCTTAGTCATTTTGATCATGAG
GGTTAAATATTGTAATATGGATACTTGAAGGACTTTATATAAAAGGATGACTCAAAGGAT
AAAATGAACGCTATTTGAGGACTCTGGTTGAAGGAGATTTATTTAAATTT
Sequence 3572: found in patent publication WO98/41539
ATTCGCCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTNGGTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3573: found in patent publication WO98/37094
CCCTTCGAGCGGCCGCCCGGGCAGGTACTAATGTAATCACTGAAACCTTTTCTTGAAATA
AGGGAAGCAGCCAAACTTTGATTAAAGTTGCAAGTTCTGGGGACTTGCGGGGGTTGTCAT
AAACTGTAACAGTGGGTTTTGGTTCAGCATGTAAATGCAACTTTGATTTTCTTGAGGACC
GATTGACCTGTCATGTCCCTGTATCCTCATGCTCATCATCTCAGCAGGCCTGAGAGGCTG
GGTCAGTTTGGGTGTTCATCATGAGGATTGCTTCTGCCATGGAGCTGATGGACGTGGGCA
GGTTGCTGAGAAGGTGGGGTGAAAGTGAGTGCCGGGGGTGGGTGAGTGCCCTGGTCTTGT
TCATAGGGGAGCCTTTCCCTAGCAGTGGAACGCTGTGGTCATTTTCTCTAGCATATTCCC
TTGGGAAGTCTAGATTTGCTATTAATCTGGCTGAGAATCTAAGTTCTGTGCCTTAGAGAC
AGTTTGCACTTTCCCATATTGTGCCTGGGACAGCCATATGATTTTTTTTCCCACCAAACA
AGTATGCAAACAGAAACCAGTTCAAAGGGGGATGGAGTAAAAGATGANGCAGTAGAAATG
CCTTTGAATGGTTTTCTGNANCTAATTCTCTTTAAATTT
Sequence 3574: found in patent publication WO99/51739
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTGGCAGCTAA
AGATATACAGATTACTGTTAAATTGCAGTCCTTTTTTTTTAAAGATATTTTCTTGAGTTA
TTTANAACATGGTAAGCCTGGTATTTTTTAATCAAACAAAATATTTATGAAATGGGTTTT
CTCTTAATTCTGGATTCATCATGGCTTTCTAATACCAATTGTAATATTTACAATATTCAC
CAAAACTTANAATTTTGCAAATGCTGGAATTCTGCCAGTGTTTCTTTGCTAAGCCTTGCA
TGCAAAATTTGAAATTTTAACATTGGCACCCAAAACCTACATGGAATGTATGTCTGGAGT
ATTTCAAACTTTACATTGAAACATAATTTCCTTGGAAAACAAACCATAAGCCTGAGGAGG
TTTTTATCAACTGGAATGCTTTATATTAGTTTGTTTTTCACTGTACCTGCCCGGGCGGCC
GCTCGAAAGGG
Sequence 3575: found in patent publication WO98/39446
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTNAT
TTTTTTTTTTTTTTTTTTTTTTTT
Sequence 3576: found in patent publication WO99/53040
CCCTTCGAGCGGCCGCCCGGGCAGGTACACAGGAGGCAAAGTGTTTCACATCATAGACTT
CACTTCCAACTCCTTGGAATGTTCATTTCTTTGGCTTACAGGAGAGACTAGACAGGAAGG
CCAGGCAATGCTTAGGCAACTAAAATGAGGTTGGGGGTAATGCTAACGTCACCCTCACAG

TABLE 8B

GGATGGCCACGGGGACTGTTATTCGCAAGCTGGTTTTCTAGACCTGTTAGCTGGAAGCAT
GGTGAGCACCATTTCTGGACGCTCAGGCCGTGTCGGGCTTCAGTCATCTCCACCACACAG
GTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3577: found in patent publication WO98/56804
CCCTTAGCGTGGTCGCGGCCGAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTGGCTAC
ATTTTACTTTATTTGTTGTAAGGAAAACCAATTGACTAAGTTGTCCCCAAAATGTTAGT
GTTCACTGATCAAGAGGGAAATGAGGTCAGAAGGCAAACTTTTCACTTNTTCTCAAACAT
AAATTGCAAGTATCACANAAAATTGTAACAACACATGCAACACGGGATGGCTTTCAACAC
ACAGAGAGCCTAAGCAAGAAGAGTGAGTACCTGCCCGGGCGGCCGCTCGAAAGGG
Sequence 3578: found in patent publication WO99/04265
CCCTTAGCGTGGTCGCGGCCGAGGTACCAAAGGCGACAGCTGCCCATTCCGTCACTGTGA
AGCTGCAATAGGAAATGAAACTGTTTGCACATTATGGCAAGAAGGGCGCTGTTTTCGACA
GGTGTGCAGGTTTCGGCACATGGAGATTGATAAAAAACGCAGTGAAATTCCTTGTTATTG
GGAAAATCAGCCAACAGGATGTCAAAAATTAAACTGCGCTTTCCATCACAATAGAGGACG
ATATGTTGATGGCCTTTTCCTACCTCCGAGCAAAACTGT[illegible]TTGCCCACTGTGCCTGAGTC
ACCAGAAGAGGAAGTGAAGGCTAGCCAACTTTCAGTTCAGCAGAACAAATTGTCTGTCCA
GTCCAATCCTTCCCCTCAGCTGCGGAGCGTTATGAAAGTAGAAAGTTCCGAAAATGTTCC
TAGCCCCACGCATCCACCAGTTGTAATTAATGCTGCAGATGATGATGAAGATGATGATGA
TCAGTTTTCTGAGGAAGGTGATGAAACCAAAACACCTACCCTGCAACCAACTNCTGAAGT
TCACAATGGATTACGAGTGACTTCTGTCC
Sequence 3579: found in patent publication WO99/63088
CCCTTAGCGTGGTCGCGGCCGAGGTACCAAAAAGAAGAAACCAATGGGGACGAGTTGGCA
ACGGAATCTGAAGTGCTCTAGCTGCAAGGTAGATGCAAGCACATGCTATAGTCTCTGGTT
GAAATCGAACAAACACATTGGTTCGAAGACTGTCATTCATGTAATTCCTGAAAAATATTT
CAACTATAAGCTTGCATGTAAACAAACCAGTTCTTCTGAAGCTTACATAAAATTGGAGAC
TCAATCTACTTTATTCTTTTTTCTTCTCTTATTTATATTCACATCCTCATATTCTAGCAT
ATAACAACTCTTAACTCAAAAAAATCAGTAAGCAATAAGAATTTAATACTAGGACCATAT
GCGATTTTCCTATATATGAGCGAAGCCCTTTTAAATTATTTCATATTACAATCCAAACTA
GAAATTACTCCTAAAAAGTTAATATATTTCTGTAAAAAGCAATGCTTTTCAAAGTCATTC
TGACACGATTAGTTTCAGAAATGATAAACCACTCCAATAATACTTCAAGCCATTAATTAC
TGACCATCTCTCCTTTNTCACAATAAAAGCAGTGTCAACCAAGTTCTTTTCAAAAGCTCA
AAATACCGTTAACAGGG
Sequence 3580: found in patent publication WO99/54460
CCCTTTCGAGCGGCCGCCCGGGCAGGTACAGAGCCCTGTTATTTTTCTCTTTGGCCCTAT
TTGGCTGCTTTTATTAATGCATCAGAACTTTATGTATAATCATATGGATTTATACGTAAA
TTAAGAAAAAAATGTCCATTTCATTCAGTTCATATGTTCTAAACGTATTGCTGATCATTCT
TAAATGAGACTCCAGGTTTACATTCTTACATAAAGTGCAGGGATCCCGAAGTTAGCCCCA
AAGATCCCCTTGCCTTTTTCAGACTTGCTCAAATGTTACCTTATCAGTGGGGCCTTTCCT
GACCACACTTTAAAAACCTCAACACCCACCCATGGGCCTTGTCCTCCTTCCCGGCTTCAT
TTTTTGGCATATACTTATCAAATGTGAACATATGATGCATTTGCTTTAT
Sequence 3581: found in patent publication WO99/46374
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTNTTTTTTTTTTTTTTTTTTTTTTTTTTA
AAANNCAAAATTAAATTTTNTTTCACATTGNTNGAAACCNTGAAAAACNTTTACNCTTTN
CCAT
Sequence 3582: found in patent publication WO99/28334
CCCTTGAGCGGCCGCCCGGGCAGGTACGCGGGGGCTTCTAGTTTGCGGTTCAGGTTTGGC
CGCTGCCGGCCAGCGTCCTCTGGCCATGGACACCCCGGAAAATGTCCTTCAGATGCTTGA
AGCCCACATGCAGAGCTACAAGGGCAATGACCCTCTTGGTGAATGGGAAAGATACATACA
GTGGGTAGAAGAGAATTTTCCTGAGAATAAAGAATACTTGATAACTTTACTAGAACATTT
AATGAAGGAATTTTTAGATAAGAAGAAATACCACAATGACCCAAGATTCATCAGTTATTG
TTTAAAATTTGCTGAGTACCTCGGCCGCGACCACGCTAAGGG
Sequence 3583: found in patent publication WO98/39421
CCCTTTCGAGCGGCCGCCCGGGCAGGTACTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT
TTTTTTTTTTTTTTTTTTTNTTT
Sequence 3584: found in patent publication WO99/04265
CCCTTTCGAGCGGCCGCCCGGGCAGGTACGCGGGGGGATACTACTAGGGAAAGCAGAAGA
TCTGAATCACTGTCCCCAAGAAGAGAAGCTTCTAGAGAGAACAAAAGATCTCAGCCAAGA

TABLE 8B

GTGAAAGATTCTTCCCCAGGAGAAAAATCCAGGTCCCAGAGCAGAGAACGAGAAAGTGAT
AGAGATGGGCAGAGGAGAGAGAGAGAAAGGAGAACCAGAAAGTGGTCTAGGTCCAGATCT
CATTCTAGGTCCCCCTCAAGATGTAGAACAAAAAGTAAGAGTTCATCATTTGGTAGAATT
GACAGAGATAGTTACTCTCCCCGGTGGAAGGGAAGATGGGCAAATG

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
22355	T74284	0.49	1.89	2.07	3.86	4.25
22411	T74141	0.33	2.23	1.35	6.69	4.04
23000	R38645	1.45	4.91	1.95	3.38	1.34
23185	R39239	10.33	22.60	38.32	2.19	3.71
23454	R38703	0.23	0.43	0.73	1.91	3.21
23759	T77100	0.25	0.76	0.83	3.06	3.32
23804	T77499	0.16	0.63	0.21	3.95	1.32
24339	R37876	0.49	0.92	1.52	1.86	3.09
24642	T80232	0.96	4.76	5.68	4.96	5.92
24854	R38951	0.18	0.58	0.58	3.24	3.23
25063	R38946	0.18	0.33	0.91	1.80	4.99
25069	R38966	3.14	12.30	5.39	3.92	1.72
25389	R17667	2.08	16.47	9.84	7.90	4.73
26200	R20648	1.40	2.28	4.32	1.63	3.08
26568	R39111	0.83	5.02	0.27	6.07	0.33
26616	R13557	2.87	6.78	13.25	2.36	4.61
27544	R40057	0.62	1.13	3.68	1.83	5.96
29349	R41294	0.14	0.42	0.50	2.93	3.46
30207	R40231	0.10	0.28	0.31	2.79	3.07
32576	R43535	0.25	1.03	0.77	4.11	3.10
32737	R43093	0.82	0.69	2.86	0.84	3.49
33827	R44741	0.12	0.47	0.06	3.86	0.47
34442	R44985	0.13	0.92	0.42	7.32	3.34
35503	R45672	0.28	0.86	0.58	3.04	2.07
35758	R45358	0.10	0.36	0.44	3.65	4.44
35788	R45976	0.28	0.45	1.14	1.60	4.06
35828	R14663	3.10	21.69	0.82	7.00	0.26
39874	R54559	0.51	0.46	3.21	0.90	6.26
40026	R53942	1.79	6.90	4.28	3.86	2.39
41108	R56738	1.97	2.97	7.48	1.51	3.79
41391	R56123	3.21	2.62	11.05	0.81	3.44
42313	R61067	0.49	1.50	1.23	3.05	2.50
43118	R60094	0.26	1.06	0.51	4.09	1.96
44477	H07071	0.55	1.69	1.96	3.04	3.54
45327	H08548	0.71	2.69	2.50	3.78	3.51
45542	H08561	4.79	17.17	24.85	3.59	5.19
45544	H08564	0.94	10.56	12.30	11.23	13.08
46266	H09427	0.33	0.53	1.12	1.64	3.44
47459	H11562	0.35	0.46	2.08	1.31	5.96
47481	H11808	9.62	21.97	32.79	2.28	3.41
49164	H16637	0.51	1.75	1.63	3.42	3.19
49332	H15416	0.13	0.47	0.25	3.71	1.94
49354	H15099	1.03	3.41	5.45	3.33	5.31
49836	H29207	1.72	2.53	6.19	1.47	3.60
50483	H17615	0.89	1.49	4.57	1.69	5.16
50764	H17335	0.14	0.47	0.43	3.27	2.98
50877	H18531	4.71	31.40	74.62	6.67	15.85
51010	H19239	1.29	2.78	4.14	2.16	3.21
51363	H22699	0.75	1.62	2.41	2.16	3.19
51666	H20908	0.21	0.75	0.57	3.50	2.67
52949	H29432	0.34	0.87	1.17	2.53	3.41
62277	T40311	0.37	0.62	1.14	1.67	3.08
66491	R16134	0.39	1.21	0.71	3.07	1.80
66560	T67053	4.02	20.47	46.82	5.09	11.64
73638	T55770	2.56	8.38	9.20	3.27	3.59
76252	T59873	6.35	14.97	19.41	2.36	3.06

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
79022	T62179	3.44	10.92	1.27	3.18	0.37
79629	T62491	0.97	3.31	1.85	3.40	1.90
79899	T61456	0.56	1.43	1.99	2.56	3.56
80186		1.57	4.15	5.72	2.64	3.64
80948	T70123	43.79	29.44	219.88	0.67	5.02
81203	T57069	0.92	3.11	1.54	3.39	1.68
81289	T60048	3.02	11.98	6.61	3.96	2.19
82225	T68892	0.68	1.08	4.23	1.59	6.21
82290	T69073	0.80	0.94	4.32	1.17	5.37
83011	T69468	15.41	51.54	62.11	3.35	4.03
84955	T74846	1.26	4.92	4.24	3.89	3.35
85634	T62048	3.68	7.56	11.95	2.05	3.25
108265	T70541	2.76	4.63	15.34	1.68	5.56
108377	T77733	0.67	2.08	1.45	3.10	2.16
108801	T77893	1.93	1.57	6.10	0.81	3.17
109437	T81338	0.43	1.40	1.39	3.25	3.25
110307	T82022	0.16	0.35	0.50	2.22	3.21
110503	T89996	0.32	1.25	0.39	3.95	1.23
111204	T85249	2.65	9.75	6.23	3.68	2.35
121196	T97170	22.53	30.38	88.64	1.35	3.93
121406	T96688	0.28	0.35	0.95	1.24	3.34
122063	T98394	0.43	0.82	1.39	1.90	3.21
122159	T98612	7.18	48.98	50.62	6.83	7.05
122321	T99176	2.89	6.53	16.62	2.26	5.74
122955	R00323	0.21	0.42	0.65	1.95	3.00
123474	R00706	0.95	1.19	3.73	1.25	3.95
123926	R01515	4.52	15.69	39.08	3.47	8.65
124597	R02480	0.76	2.92	2.22	3.83	2.91
126284	R06392	0.15	0.52	0.43	3.60	2.95
126650	R06900	1.10	1.29	3.96	1.18	3.61
127751	R09724	1.94	2.19	6.08	1.13	3.13
128301	R11529	0.12	0.33	0.41	2.75	3.47
128373	R11636	0.13	0.53	0.62	3.94	4.60
128503	R10159	0.57	1.95	1.04	3.43	1.83
128737	R16733	0.29	2.37	0.48	8.22	1.68
129600	R16543	0.11	0.30	0.36	2.69	3.18
129725	R16957	2.30	7.12	12.99	3.10	5.65
131839	R24530	0.48	0.73	1.78	1.54	3.73
132392	R26531	0.59	0.80	2.09	1.34	3.53
132748	R26892	0.17	0.55	0.39	3.23	2.29
133273	R26732	1.07	3.62	5.49	3.38	5.13
133303	R26744	1.37	3.10	4.29	2.26	3.12
135352	R32959	0.81	1.11	3.73	1.37	4.59
135791	R33355	0.10	0.39	0.22	3.94	2.21
136235	R33642	3.27	13.42	9.20	4.10	2.81
136508	R34567	1.32	2.04	9.02	1.55	6.85
138775	R63543	1.74	5.95	10.79	3.43	6.21
138991	R62603	1.54	13.90	19.70	9.03	12.79
140655	R66863	0.69	1.86	2.30	2.71	3.35
140806	R66310	4.04	7.07	12.70	1.75	3.14
141361	R63841	0.13	0.31	0.48	2.47	3.82
141726	R69671	1.09	3.85	1.57	3.52	1.44
142067	R69236	0.37	2.09	2.00	5.59	5.37
142647	R70925	0.18	0.34	0.54	1.91	3.04
142788	R71440	0.49	1.74	1.22	3.54	2.47
143887	R76394	1.32	3.24	4.89	2.46	3.71

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
144777	R76544	3.84	5.89	14.11	1.53	3.67
144902	R78548	3.41	7.33	10.67	2.15	3.13
146882	R80990	1.21	4.25	4.57	3.53	3.79
147050	R80322	1.20	3.84	1.49	3.19	1.24
153646	R48844	0.68	10.84	10.05	15.88	14.72
154600	R55490	0.22	0.93	0.69	4.19	3.14
154749	R55619	0.86	3.80	4.32	4.39	4.99
155806	R72243	2.14	2.57	13.37	1.20	6.24
162310	H28091	1.18	4.33	3.77	3.65	3.18
166195	R88242	0.38	1.19	1.30	3.14	3.45
167205	R90934	0.43	1.57	3.46	3.61	7.95
172751	H19686	0.71	3.03	1.92	4.26	2.69
183602	H44051	6.62	52.70	32.31	7.96	4.88
184022	H28119	0.88	3.93	3.07	4.47	3.50
186132	H39991	0.36	2.48	0.39	6.90	1.09
186767	H50622	4.48	12.18	17.25	2.72	3.85
187266	R86305	2.44	4.95	9.17	2.03	3.76
192242	H41165	26.43	87.17	61.11	3.30	2.31
192419	H39115	0.10	0.08	0.37	0.79	3.73
193546	H47358	1.52	2.57	5.92	1.69	3.89
196189	R92281	3.67	11.59	7.24	3.16	1.98
196612	R92994	1.05	2.67	4.18	2.55	4.00
196650		14.02	31.17	50.05	2.22	3.57
198960	H83225	0.78	2.96	3.05	3.79	3.90
199180	R95740	0.84	2.55	0.85	3.02	1.00
199663	R96668	0.94	3.60	8.34	3.84	8.90
200396	R97220	1.02	4.72	1.17	4.64	1.15
201168	R98532	0.67	1.03	2.07	1.55	3.10
202919	H54093	1.70	6.12	1.77	3.59	1.04
204214	H59203	0.47	1.49	2.27	3.15	4.81
204299	H59259	3.00	5.38	9.61	1.79	3.20
204897	H57180	0.56	1.37	2.03	2.42	3.60
205745	H58118	17.37	30.58	58.81	1.76	3.39
207358	H58873	2.82	16.14	8.38	5.72	2.97
209246	H63976	8.87	11.90	29.82	1.34	3.36
210919	H69785	0.92	0.80	3.70	0.86	4.00
212165	H68845	5.42	27.08	23.21	5.00	4.28
213635	H72113	0.40	1.61	3.30	4.01	8.23
214133	H72918	1.42	5.49	1.72	3.87	1.22
214162	H77766	1.57	3.61	5.32	2.31	3.40
214441	H73816	0.91	2.30	4.06	2.52	4.44
214565	H73727	4.23	34.93	35.35	8.27	8.37
221828	H92234	0.10	0.32	0.24	3.22	2.44
223350	H86642	2.25	2.18	7.64	0.97	3.39
233583	H78484	1.20	4.36	2.24	3.64	1.87
235155	H79469	4.64	13.12	18.63	2.83	4.01
235923	H52353	0.67	3.02	1.34	4.49	1.99
236034	H61242	1.13	5.56	4.39	4.91	3.88
236333	H62387	0.72	1.67	3.05	2.32	4.25
238886	H67188	6.25	24.71	20.99	3.95	3.36
239568	H81359	1.21	5.42	0.61	4.48	0.50
241365	H81200	0.76	2.94	3.75	3.87	4.94
241432	H80685	1.27	1.90	4.44	1.50	3.49
241530	H84480	1.16	5.03	1.29	4.35	1.11
242952	H95712	10.28	27.93	35.77	2.72	3.48
243816	N39161	4.36	27.48	1.91	6.30	0.44

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
244355	N75745	1.15	3.60	3.53	3.13	3.07
245774	N55269	0.12	0.24	0.36	2.10	3.09
250654	H95959	4.24	27.61	25.42	6.51	5.99
250883	H96834	1.31	1.83	5.05	1.40	3.86
251685	H96738	0.56	1.30	2.16	2.33	3.87
261519	H98636	0.10	0.70	0.54	6.74	5.22
265668	N31459	0.79	1.64	3.03	2.08	3.86
269606	N26769	0.12	0.33	0.62	2.77	5.23
271038	N34362	5.91	11.38	18.38	1.92	3.11
272630	N44141	0.94	1.50	3.59	1.59	3.82
273625	N46299	1.00	1.55	4.41	1.56	4.42
277487	N56888	0.67	12.49	1.01	18.59	1.51
277507	N48751	1.31	2.08	4.72	1.58	3.59
278570	N66177	0.50	1.07	1.66	2.13	3.32
279163	N46324	0.61	2.14	0.90	3.50	1.48
280735	N50603	0.87	2.20	2.70	2.53	3.10
280758	N50611	39.70	55.16	132.71	1.39	3.34
282117	N48261	0.95	2.38	3.61	2.50	3.80
282956	N45131	0.57	1.02	1.85	1.81	3.28
284479	N75122	0.39	2.32	0.31	5.93	0.80
284592	N64781	0.54	0.99	1.74	1.84	3.22
285226	N66278	15.27	60.01	16.49	3.93	1.08
289337	N99582	1.41	9.00	10.61	6.39	7.53
290082	N59377	0.41	0.31	1.79	0.75	4.37
290230	N62269	0.19	0.62	0.62	3.23	3.25
291255	N72215	0.94	3.17	3.77	3.37	4.02
291633	N73448	9.46	38.49	31.64	4.07	3.34
291756	N74524	0.48	1.44	0.94	3.01	1.97
292522	N91307	0.10	0.60	0.50	5.76	4.75
294951	N71484	0.10	0.29	0.31	2.90	3.06
296199	N74390	0.90	2.92	1.40	3.25	1.56
296568	N73843	0.33	2.63	3.09	8.03	9.43
296795	N74085	0.10	0.25	0.36	2.50	3.60
298417	N74131	0.43	0.48	1.68	1.10	3.86
299570	AI822140	0.11	0.34	0.29	3.00	2.52
306771	N91887	0.91	1.08	2.78	1.19	3.06
306901	W24147	0.44	1.02	2.14	2.31	4.87
307053	W21015	1.03	1.21	6.89	1.17	6.67
309583	W30772	0.31	0.60	1.49	1.93	4.84
309932	N95433	0.36	0.40	2.55	1.12	7.10
321389	W44860	0.79	6.24	5.03	7.88	6.35
324492	W51794	1.01	2.60	5.56	2.58	5.52
340566	W52773	0.33	0.80	1.04	2.43	3.13
340806	W56793	0.10	0.46	0.60	4.59	5.92
340864	W56634	2.25	14.64	1.43	6.51	0.63
342378	W65460	7.45	36.89	3.06	4.95	0.41
342640	W68220	5.08	10.37	28.05	2.04	5.52
345056	W72798	0.55	1.70	1.98	3.06	3.57
345523	W72436	1.69	7.13	3.14	4.21	1.85
345670	W72005	0.83	4.37	2.95	5.27	3.56
346997	W79345	1.37	1.44	6.08	1.05	4.45
347182	W80611	0.21	0.52	0.71	2.48	3.43
356665	W84370	0.12	0.41	0.36	3.46	3.03
356992	W92964	2.42	7.45	9.25	3.08	3.82
357084	W93178	0.16	0.40	0.71	2.42	4.33
357785	W95594	0.56	2.66	0.76	4.74	1.35

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
359747	AA011057	0.94	2.98	1.61	3.18	1.72
362419	AA018338	0.49	1.49	0.94	3.03	1.91
362742	AA018229	1.34	4.36	3.27	3.26	2.44
363377	AA019591	0.95	3.54	1.79	3.72	1.88
364141	AA021212	0.35	1.20	1.16	3.38	3.27
364301	AA022466	0.12	0.35	0.47	3.01	4.03
365945	AA034222	0.60	2.17	0.70	3.64	1.17
377275	AA055485	4.60	15.24	5.88	3.31	1.28
377731	AA056231	0.91	2.26	5.10	2.47	5.58
377801	AA777002	1.11	1.24	4.19	1.12	3.76
378488	AA777187	3.32	18.00	2.76	5.42	0.83
378502	AA777192	0.97	3.05	3.64	3.16	3.77
378565	AA775738	1.26	6.18	0.88	4.92	0.70
378813	AA683520	56.46	72.46	210.18	1.28	3.72
379771	AA706022	61.18	401.80	24.91	6.57	0.41
380890	AA058597	0.71	1.84	3.36	2.59	4.74
383574	AA679000	0.19	1.31	0.39	6.76	2.02
415415	W81118	4.97	18.16	12.06	3.66	2.43
415804	W84820	0.56	1.09	3.19	1.96	5.71
417307	W90002	0.12	0.61	0.45	4.87	3.59
417711	W88967	0.50	11.88	8.70	23.80	17.43
417867	W90224	2.71	7.23	9.86	2.67	3.64
418150	W90164	0.87	1.85	6.44	2.12	7.37
418422	W92812	0.18	0.56	0.35	3.20	2.00
428582	AA005087	1.08	3.33	3.31	3.07	3.05
430368	AA680070	0.79	0.70	2.85	0.89	3.60
430709	AA678092	4.83	11.69	14.94	2.42	3.10
431214	AA682514	0.57	1.75	0.92	3.06	1.61
434776	AA701863	1.18	2.65	3.61	2.23	3.04
434833	AA703141	0.49	3.31	0.68	6.78	1.39
435080	AA701457	1.04	3.53	3.92	3.39	3.76
435720	AA700764	0.46	1.11	1.69	2.41	3.67
436094	AA700832	0.85	3.40	1.47	3.99	1.73
436106	AA701981	2.01	6.86	6.48	3.41	3.22
436456	AA699644	0.63	1.52	2.69	2.41	4.28
447686	AA702758	0.10	0.65	0.35	6.47	3.53
447715	AA702781	2.35	7.31	4.43	3.11	1.89
449034	AA777384	0.50	1.72	1.30	3.41	2.57
449198	AA777605	0.10	0.34	0.29	3.40	2.91
449329	AA777917	2.38	8.10	4.64	3.41	1.95
450060	AA703392	1.41	1.84	4.62	1.30	3.26
450744	AA704483	0.48	1.46	0.83	3.04	1.72
451587	AA707086	0.86	3.13	6.80	3.65	7.94
451907	AA706968	1.78	4.89	5.57	2.74	3.12
452374	AA700876	0.20	0.37	0.64	1.85	3.21
452880	AA778771	1.47	1.25	4.74	0.85	3.23
452948	AA778874	0.10	0.18	0.80	1.77	8.00
453589	AA679565	2.10	7.06	3.96	3.36	1.88
454449	AA677317	4.29	8.96	13.81	2.09	3.22
454970	AA676625	1.99	16.90	2.82	8.47	1.42
460487	AA677706	0.95	0.94	4.10	0.99	4.33
461336	AA699770	1.75	3.82	5.28	2.19	3.03
461749	AA682381	0.64	2.43	2.88	3.78	4.49
462412	AA699878	1.90	3.66	9.49	1.93	5.00
462603	AA704965	0.91	2.17	3.93	2.37	4.30
470393	AA031513	1.06	6.50	1.62	6.12	1.53

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
471196	AA034213	0.71	1.51	2.12	2.14	3.00
486493	AA044379	1.07	2.05	3.60	1.91	3.37
487117	AA045385	0.35	0.45	3.05	1.30	8.78
487381	AA046704	1.42	2.23	4.26	1.57	3.01
487733	AA058818	11.23	34.36	24.69	3.06	2.20
488025	AA053288	1.18	1.85	3.56	1.57	3.02
489535	AA098867	0.21	0.73	0.60	3.54	2.93
489626	AA099169	0.73	1.55	2.19	2.14	3.02
490751	AA122269	0.44	1.46	0.39	3.29	0.88
491113	AA136983	0.27	0.48	0.87	1.79	3.24
491770	AA150505	2.00	7.03	6.60	3.52	3.31
502367	AA134871	3.41	7.36	12.64	2.16	3.71
502464	AA156801	0.46	1.55	1.21	3.35	2.61
502536	AA156964	1.73	5.42	4.90	3.14	2.84
502701	AA135929	0.17	0.76	0.59	4.61	3.55
504226	AA132090	3.05	8.46	11.43	2.78	3.75
504927	AA151002	3.87	17.07	6.27	4.41	1.62
504979	AA151214	0.62	1.93	0.89	3.10	1.44
505874	AA683568	4.11	13.20	2.51	3.21	0.61
506361	AA709410	1.02	2.16	4.02	2.13	3.95
506575	AA708508	1.22	6.05	0.85	4.98	0.70
506669	AA708916	0.12	0.27	0.49	2.28	4.25
509641	AA058323	7.45	17.13	30.34	2.30	4.07
510576	AA055880	20.34	40.72	218.11	2.00	10.72
511586	AA126911	77.99	85.93	247.59	1.10	3.17
526184	AA076645	1.66	12.89	4.43	7.75	2.67
526657	AA128607	1.23	9.11	3.87	7.39	3.14
530460	AA112172	1.39	2.26	7.13	1.63	5.14
550141	AA102591	9.56	16.64	30.52	1.74	3.19
588915	AA209529	6.72	5.03	28.89	0.75	4.30
590264	AA155942	5.69	31.95	55.79	5.61	9.80
590774	AA158169	0.12	0.36	0.18	3.03	1.49
609332	AA167223	0.28	0.84	1.14	2.96	4.00
609935	AA169154	0.10	0.08	0.57	0.85	5.66
611239	AA176483	0.81	2.51	2.22	3.09	2.73
625234	AA181085	0.74	1.39	2.31	1.88	3.12
627508	AA192268	0.10	0.40	0.32	3.91	3.11
629906	AA219100	1.04	1.36	5.68	1.31	5.47
668442	AA243828	0.55	1.12	1.82	2.04	3.30
683151	AA214559	0.46	1.56	1.37	3.42	2.99
700527	AA291163	4.62	8.41	16.52	1.82	3.58
701481	AA286908	0.86	1.17	3.54	1.36	4.12
701677	AA287004	3.51	15.61	16.22	4.45	4.63
703581	AA278921	5.28	16.73	16.86	3.17	3.19
711680	AA280931	1.46	2.63	4.68	1.80	3.20
712916	AA282230	0.81	3.08	2.71	3.79	3.33
713230	AA283629	2.24	8.68	9.39	3.88	4.19
714437	AA293300	2.00	6.36	1.88	3.18	0.94
724387	AA253448	1.53	4.10	5.13	2.68	3.36
724888	AA291484	1.25	3.96	4.44	3.16	3.55
725143	AA404225	1.10	1.99	13.17	1.81	12.01
725549	AA293515	1.00	3.37	0.98	3.35	0.98
726488	AA399264	3.07	6.61	9.25	2.15	3.01
726678	AA399317	0.46	0.42	1.71	0.92	3.72
730366	AA421584	0.16	0.48	0.51	3.05	3.19
730942	AA417227	0.25	0.69	0.84	2.79	3.38

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
731020	AA421258	0.43	1.47	1.04	3.42	2.42
739578	AA476961	27.92	100.61	12.26	3.60	0.44
741474	AA401111	1.79	5.53	5.37	3.10	3.00
741977	AA401441	0.87	2.38	4.02	2.74	4.64
742064	AA405748	0.76	2.34	2.69	3.07	3.54
742672	AA401370	1.79	5.87	1.06	3.29	0.59
742857	AA406205	1.16	3.72	0.84	3.19	0.72
743439	AA609363	0.15	0.34	0.54	2.36	3.71
743731	AA629357	0.48	0.89	1.49	1.84	3.10
744905	AA625788	0.53	1.91	1.69	3.59	3.17
744979	AA625922	0.11	0.38	0.24	3.30	2.13
745011	AA626024	0.96	1.42	3.06	1.48	3.19
745283	AA625567	1.04	5.28	4.75	5.05	4.55
745487	AA625977	1.90	2.05	6.20	1.08	3.25
745520	AA626240	0.56	1.67	1.21	3.01	2.17
752640	AA417659	45.71	166.54	42.53	3.64	0.93
752837	AA436384	2.73	21.36	1.42	7.81	0.52
753104	AA478812	3.40	13.76	1.30	4.04	0.38
753234	AA406372	3.58	11.37	6.60	3.18	1.85
753791	AA406113	0.36	0.83	2.00	2.30	5.57
753881	AA479453	1.01	3.33	1.75	3.30	1.73
754449	AA410480	0.49	1.42	1.56	2.90	3.17
754479	AA410567	0.53	0.60	2.42	1.13	4.58
754525	AA436233	0.98	5.94	1.61	6.05	1.63
755599	AA419251	1.83	2.60	6.65	1.42	3.63
757340	AA437090	0.49	1.23	1.96	2.52	4.01
759865	AA423867	0.49	0.94	1.61	1.93	3.32
760224	AA425139	0.29	0.47	0.87	1.63	3.03
767101	AA424395	0.91	2.85	2.45	3.15	2.71
767188	AA424578	1.00	3.68	1.96	3.67	1.95
767277	AA418507	4.42	7.72	15.71	1.75	3.55
767405	AA417921	9.16	23.64	29.16	2.58	3.18
767746	AA418021	1.22	5.13	1.40	4.21	1.15
767784	AA418670	6.20	21.58	7.17	3.48	1.16
769537	AA425861	0.81	3.08	2.25	3.78	2.77
769921	AA430504	0.92	2.59	3.35	2.81	3.64
770027	AA427433	1.78	6.46	2.87	3.64	1.62
770388	AA430665	3.00	9.42	1.38	3.14	0.46
770785	AA427619	0.17	0.35	0.51	2.10	3.04
771290	AI732747	0.41	1.47	0.82	3.56	1.98
772878	AA428454	1.33	4.19	1.14	3.14	0.85
773301	AA425556	1.01	2.92	3.81	2.89	3.77
773344	AA425395	0.74	1.49	3.68	2.02	4.98
781050	AA430010	21.37	51.67	79.21	2.42	3.71
781089	AA430032	20.46	39.80	81.62	1.95	3.99
782171	AA431210	2.78	8.85	9.43	3.18	3.39
782547	AA431796	0.95	1.27	2.96	1.34	3.13
782703	AA448110	0.92	5.04	0.76	5.46	0.82
782719	AA448126	11.34	27.77	54.01	2.45	4.77
784285	AA447504	1.19	1.71	3.71	1.44	3.13
785542	AA450336	0.36	1.15	0.92	3.20	2.58
785975	AA449742	0.62	3.57	3.14	5.77	5.08
786609	AA478481	1.14	2.60	3.53	2.27	3.09
786675	AA451904	1.92	3.92	10.99	2.04	5.73
787938	AA452278	0.24	0.31	0.81	1.26	3.32
788285	AA450009	0.78	1.48	2.64	1.90	3.40

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
788363	AA453032	0.10	0.34	0.35	3.38	3.46
795263	AA454008	0.63	2.04	1.97	3.23	3.12
795543	AA459663	4.61	15.96	16.62	3.46	3.61
796253	AA461132	10.71	13.71	33.64	1.28	3.14
796263	AA461136	2.02	4.58	10.93	2.27	5.42
796469	AA460432	1.08	2.74	5.08	2.54	4.72
796475	AA460438	0.12	0.34	0.43	2.81	3.62
796613	AA461456	1.35	5.96	5.84	4.42	4.33
796646	AA461467	1.01	3.13	0.67	3.10	0.67
796718	AA460872	0.77	3.23	4.95	4.21	6.44
809578	AA456616	3.39	15.26	17.45	4.50	5.14
809824	AA455519	0.27	0.74	1.39	2.79	5.20
809995	AA454862	0.70	2.91	2.19	4.14	3.13
810010	AA455210	0.35	0.91	1.26	2.61	3.64
810017	AA454879	0.73	3.48	1.96	4.76	2.68
810120	AA464236	0.56	3.16	3.18	5.63	5.67
810131	AA464358	5.92	42.63	23.43	7.20	3.96
810754	AA457728	1.21	3.36	3.97	2.79	3.29
810761	AA480851	0.76	0.98	3.99	1.30	5.25
810813	AA458884	92.88	136.89	345.06	1.47	3.72
810987	AA485512	0.30	0.77	0.95	2.57	3.18
811064	AA485608	1.43	2.37	7.40	1.66	5.19
811139	AA486460	1.80	7.61	7.69	4.22	4.26
811150	AA485734	0.14	0.45	0.21	3.09	1.45
811162	AA486471	0.91	3.75	5.93	4.14	6.54
811891	AA454978	0.19	0.73	0.45	3.92	2.42
812172	AA455396	0.45	1.48	1.05	3.31	2.36
813396	AA458627	0.14	0.51	0.50	3.56	3.50
813488	AA456062	0.46	1.53	1.58	3.31	3.41
813614	AA447835	87.25	263.98	76.40	3.03	0.88
813823	AA447781	12.45	37.09	94.53	2.98	7.59
813841	AA447797	1.12	9.12	4.38	8.14	3.91
813843	AA447798	1.75	2.93	7.31	1.68	4.19
815542	AA457042	1.17	1.80	6.37	1.54	5.46
823851	AA490684	0.50	0.69	1.74	1.38	3.49
823851	AA490684	0.34	0.84	1.90	2.50	5.61
824132	AA490805	0.57	1.86	1.35	3.25	2.35
824233	AA491247	0.69	1.08	2.23	1.57	3.26
824602	AA491191	5.73	7.22	20.05	1.26	3.50
825207	AA504120	4.70	15.30	10.61	3.26	2.26
825327	AA504556	5.34	8.73	32.04	1.63	6.00
826995	AA521384	1.08	2.16	3.53	2.00	3.27
838373	AA458801	1.26	2.52	5.02	2.00	3.99
839991	AA490172	6.74	36.77	41.88	5.46	6.21
840266	AA485303	68.42	129.41	363.25	1.89	5.31
840511	AA487812	5.53	25.97	32.15	4.70	5.81
840677	AA486362	35.30	55.65	152.11	1.58	4.31
840821	AA486261	2.70	8.96	13.72	3.32	5.09
841282	AA486838	0.94	2.85	21.21	3.04	22.61
841650	AA487480	0.47	1.18	1.44	2.54	3.09
842871	AA486407	1.07	1.88	3.82	1.76	3.57
843352	AA489343	21.70	25.75	66.96	1.19	3.09
845477	AA644211	0.65	2.83	0.92	4.37	1.42
855547	AA664195	1.71	6.78	4.72	3.95	2.75
855745	AA663981	1.73	22.31	28.02	12.89	16.18
858849	AA666348	0.13	0.41	0.08	3.15	0.60

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
868304	AA634006	7.21	33.65	30.27	4.66	4.20
869450	AA680244	59.61	157.20	234.58	2.64	3.94
877641	AA488185	4.54	9.70	13.71	2.13	3.02
878182	AA775447	2.86	16.27	13.95	5.68	4.87
878409	AA670355	0.64	0.98	2.32	1.53	3.63
878413	AA670357	0.21	0.88	0.56	4.13	2.62
878525	AA775857	4.90	5.88	23.15	1.20	4.72
878550	AA775865	0.81	2.47	2.52	3.06	3.13
878578	AA775241	2.96	37.37	22.47	12.63	7.59
878631	AA775290	1.00	0.97	3.15	0.97	3.15
878652	AA670200	0.26	0.80	0.86	3.09	3.35
884692	AA630017	1.40	6.18	7.94	4.43	5.69
897906	AA598652	0.58	2.08	5.25	3.58	9.07
897910	AA598653	1.38	1.98	6.55	1.43	4.75
898092	AA598794	0.64	10.07	3.54	15.69	5.52
898195	AA598567	0.10	0.21	0.40	2.01	3.80
898258	AA598668	0.57	2.23	3.13	3.91	5.49
949988	AA600214	1.90	5.51	6.30	2.90	3.32
951117	AA620477	0.74	2.33	2.62	3.15	3.54
951305	AA620528	0.91	2.11	6.09	2.32	6.69
970391	AA776087	0.95	3.14	1.42	3.30	1.49
970590	AA683077	5.87	26.86	25.62	4.58	4.37
1031471	AA609216	0.10	0.33	0.31	3.30	3.10
1031698	AA609556	1.24	2.54	10.21	2.04	8.21
1034699	AA779892	0.23	3.42	0.35	14.88	1.50
1048916	AA778560	1.19	1.64	3.86	1.39	3.25
1048993	AA778645	0.87	2.47	3.27	2.84	3.76
1055760	AA628230	0.21	0.60	1.97	2.78	9.17
1069733	AA599574	0.10	0.76	0.35	7.57	3.51
1276665	AA776794	0.82	1.33	3.77	1.62	4.59
1293191	AA682779	0.96	1.33	4.44	1.38	4.60
1321598	AA759046	0.47	1.93	0.38	4.10	0.81
1343726	AA725561	0.42	0.68	1.35	1.63	3.22
1411726	AA856556	10.07	38.85	42.70	3.86	4.24
1420501	AA829295	0.24	0.11	0.80	0.46	3.34
1455641	AA863149	9.96	28.97	42.98	2.91	4.32
1455976	AA862371	7.23	29.28	46.61	4.05	6.45
1456625	AA864704	1.04	6.90	5.73	6.62	5.50
1456776	AA863314	2.95	10.05	2.61	3.41	0.89
1456962	AA865878	1.48	6.44	2.76	4.36	1.87
1461321	AA883400	1.31	2.35	4.51	1.79	3.44
1461664	AA885311	1.15	2.08	4.27	1.81	3.71
1467481	AA884886	0.27	0.86	0.73	3.21	2.73
1468597	AA884622	0.10	0.19	0.32	1.91	3.23
1469230	AA862813	3.36	10.89	7.35	3.25	2.19
1469292	AA863383	3.05	5.80	9.56	1.90	3.13
1472152	AA873578	0.54	1.06	2.92	1.96	5.38
1472307	AA873459	0.74	2.23	1.46	3.01	1.97
1472638	AA872323	1.44	2.17	6.13	1.51	4.26
1474174	AA936799	2.44	9.63	10.05	3.95	4.12
1474900	AA878048	28.69	163.04	73.72	5.68	2.57
1475421	AA857437	1.13	3.11	4.97	2.75	4.38
1475660	AA872010	0.42	1.87	0.63	4.46	1.50
1476065	AA873060	29.27	44.91	96.41	1.53	3.29
1493160	AA878880	0.88	1.80	4.30	2.04	4.89
1584551	AA972350	4.06	31.89	5.57	7.85	1.37

Table 9

Clone	Accession No.	mpm000138	mpm000139	mpm000140	fold mpm000139/ mpm000138	fold mpm000140/ mpm000138
1587852	AA976525	0.61	2.00	1.03	3.29	1.69
1591941	AA983252	5.72	13.43	20.93	2.35	3.66
1592479	AA983267	0.92	3.98	3.16	4.35	3.45
1630990	AI018613	4.28	28.12	27.30	6.57	6.38
1631747	AI025120	2.43	10.23	7.08	4.21	2.92
1632011	AA994689	0.34	0.63	1.44	1.86	4.28
1632161	AI004930	35.49	61.51	125.59	1.73	3.54
1632216	AI005330	1.71	4.10	5.69	2.39	3.32
1635022	AA995086	0.66	2.02	0.86	3.06	1.30
1635665	AI016688	4.42	8.99	14.42	2.03	3.26
1636251	AI017240	0.10	0.04	0.32	0.40	3.19
1636495	AA999953	0.96	3.63	3.52	3.77	3.65
1636868	AI015589	0.48	2.78	2.56	5.85	5.39
1636908	AI000271	4.68	17.99	12.40	3.85	2.65
1642145	AI023265	0.89	2.53	3.97	2.84	4.46

Table 10. Genes upregulated at acute infection (passage 1)

Clone	Accession #.	control p1	HPV-16 p1	HPV-6 p1	HPV-16 p1/ control p1	HPV-6 p1/ control p1	HPV-16 p1/ HPV-6 p1	# of tumors	# of CINIII
703581	AA278921	1.09	2.45	0.62	2.26	0.57	3.98	3	2
1323448	AA873604	0.63	1.78	0.56	2.83	0.89	3.17	3	1
815051	AA465286	0.93	3.46	1.18	3.70	1.26	2.93	2	1
785368	AA476576	1.74	5.78	2.90	3.32	1.67	1.99	2	1
146882	R80990	8.32	17.41	5.32	2.09	0.64	3.27	0	2
284592	N76193	0.67	2.40	0.90	3.61	1.35	2.66	0	1
266146	N21576	0.59	0.77	2.74	1.29	4.62	0.28	0	1
80618	T57778	0.32	1.59	0.30	5.00	0.95	5.29	0	0
154172	R52030	0.16	0.62	0.16	3.83	0.97	3.96	0	0
746217	AA417744	1.90	7.09	3.19	3.72	1.67	2.22	0	0
461522	AA705237	0.51	1.82	1.82	3.57	3.58	1.00	0	0
141314	R63811	0.21	0.74	0.33	3.45	1.57	2.20	0	0
32797	R43713	0.13	0.42	0.15	3.21	1.13	2.85	0	0
704076	AA279172	1.04	1.67	6.43	1.61	6.20	0.26	0	0
392647	AA708329	0.22	0.63	1.23	2.92	5.66	0.52	0	0
360743	AA016000	0.74	2.27	3.93	3.06	5.28	0.58	0	0
589362	AA130016	0.35	0.25	1.64	0.70	4.64	0.15	0	0
392630	AA708301	0.16	0.22	0.57	1.43	3.64	0.39	0	0
824376	AA489696	0.33	0.46	1.21	1.37	3.61	0.38	0	0
208964	H61698	0.77	0.89	2.74	1.15	3.57	0.32	0	0
1555523	AA974971	0.73	1.36	2.52	1.87	3.46	0.54	0	0
826109	AA521327	0.10	0.23	0.35	2.17	3.38	0.64	0	0
461509	AA705077	0.13	0.26	0.45	1.97	3.38	0.58	0	0
1641367	AI025259	0.63	0.63	2.11	1.00	3.35	0.30	0	0
418126	W90506	5.05	3.56	16.30	0.70	3.23	0.22	0	0
383702	AA704330	0.17	0.34	0.52	2.01	3.06	0.66	0	0
140515	R66056	0.94	2.15	0.58	2.29	0.62	3.68	0	0
897305	AA488289	3.12	8.44	2.33	2.70	0.75	3.61	0	0
814769	AA454949	3.92	8.67	2.50	2.21	0.64	3.46	0	0
1574594	AA968896	6.22	18.07	5.24	2.91	0.84	3.45	0	0
239793	H80655	29.74	59.03	18.00	1.98	0.61	3.28	0	0
23572	T77308	12.67	21.39	6.73	1.69	0.53	3.18	0	0
287528	N78327	0.36	0.67	0.21	1.89	0.59	3.18	0	0
812063	AA455984	2.86	4.85	1.55	1.69	0.54	3.12	0	0
26267	R39769	9.45	21.12	6.84	2.23	0.72	3.09	0	0
144786	R77226	0.29	0.60	0.19	2.05	0.66	3.08	0	0
431280	AA682624	0.43	1.22	0.40	2.84	0.94	3.03	0	0

Table 11: Genes upregulated in extended lifespan HPV-16E6E7 cells vs. extended lifespan HPV-6E6E7 cell

Clone	Accession #	HPV-6 p6	HPV-16 p6	HPV-16p6/ HPV-6p6	# of tum rs	# of CINIII
898286	AA598974	0.83	4.47	5.41	4	2
363103	AA019203	0.71	2.38	3.34	4	2
282720	N50079	1.27	4.02	3.16	4	2
686172	AA262211	0.83	3.66	4.41	4	0
204214	H59203	0.64	2.49	3.91	3	4
342640	W68219	1.16	4.52	3.90	3	3
418279	W90793	1.45	4.93	3.39	3	2
825606	AA504719	0.60	1.91	3.16	3	2
357373	W93568	0.95	2.88	3.03	3	2
856289	AA774665	1.27	5.58	4.38	3	1
882510	AA676460	8.71	32.69	3.75	3	1
842767	AA486300	1.73	5.82	3.36	3	1
504308	AA131908	1.38	4.51	3.26	3	1
781089	AA430241	3.03	11.30	3.73	2	3
435076	AA701455	0.72	3.66	5.05	2	2
786504	AA452317	1.01	3.36	3.33	2	2
785368	AA476576	0.61	2.62	4.29	2	1
796694	AA460859	1.27	4.88	3.85	2	1
1493527	AA894927	1.06	3.33	3.16	2	1
68988	T53773	0.14	0.42	3.01	2	1
814701	AA481076	1.60	5.10	3.19	2	0
843049	AA485983	1.85	6.68	3.62	1	0
267131	N24868	1.21	4.05	3.35	1	0
146882	R80990	2.04	9.65	4.74	0	2
898062	AA598776	3.57	12.08	3.38	0	2
284592	N76193	0.42	2.42	5.74	0	1
769921	AA430504	1.87	7.11	3.80	0	1
700721	AA283961	1.17	4.34	3.70	0	1
296155	W00895	0.83	2.76	3.34	0	1
1350468	AA806371	0.11	0.35	3.09	0	1
795746	AA460299	0.91	2.79	3.06	0	1
136571	R34382	0.64	18.97	29.46	0	0
45629	H08730	0.25	1.45	5.80	0	0
428821	AA004689	0.49	2.41	4.97	0	0
271737	N43856	0.67	3.31	4.93	0	0
359119	AA010065	2.82	12.38	4.39	0	0
52076	H23123	0.54	2.17	3.99	0	0
296805	W04244	0.30	1.18	3.87	0	0
79761	T64048	1.21	4.42	3.65	0	0
725454	AA397813	3.18	11.58	3.64	0	0
277327	N57483	0.18	0.65	3.62	0	0
505597	AA147654	0.71	2.53	3.55	0	0
645565	AA207224	0.51	1.75	3.44	0	0
131370	R23190	0.36	1.24	3.43	0	0
452363	AA700879	0.78	2.62	3.34	0	0
128947	R10284	0.80	2.66	3.33	0	0
292933	N69491	0.53	1.74	3.31	0	0
67031	T70398	0.28	0.90	3.27	0	0

Clone	Accession #	HPV-6 p6	HPV-16 p6	HPV-16p6/ HPV-6p6	# of tumors	# of CINIII
590390	AA157150	1.39	4.53	3.26	0	0
268692	N25920	0.86	2.79	3.24	0	0
971367	AA683050	29.78	95.92	3.22	0	0
415089	W94994	0.94	3.02	3.21	0	0
1461138	AA868008	7.81	24.40	3.12	0	0
295483	N70382	13.45	41.84	3.11	0	0
502625	AA134576	0.76	2.35	3.09	0	0
842968	AA488460	1.21	3.73	3.08	0	0
277283	N41052	0.72	2.20	3.06	0	0
241847	H93393	0.79	2.40	3.04	0	0

Table 12: Genes upregulated in immortalized HPV-16E6E7 cells (passage 20) vs. passages 1 and/or 6

Clone	Accession #	HPV-16 p1	HPV-16 p6	HPV-16 p20	HPV-16 p20/ HPV-16 p1	HPV-16 p20/ HPV-16 p6	# of tumors	# of CINIII
236034	H61242	1.34	2.07	5.18	3.87	2.50	4	4
898218	AA598601	0.67	0.84	24.51	36.52	29.05	4	0
139009	R62612	33.42	27.66	109.75	3.28	3.97	4	0
296556	N73836	8.36	3.32	15.12	1.81	4.56	4	0
291255	W00491	2.31	0.50	1.88	0.82	3.77	3	2
1323448	AA873604	2.10	1.12	3.82	1.82	3.41	3	1
823696	AA489743	2.23	2.66	10.89	4.89	4.09	3	0
840726	AA487845	38.79	45.20	145.77	3.76	3.23	3	0
1473304	AA916325	4.04	3.10	9.72	2.41	3.14 .	3	0
745347	AA625666	2.83	0.82	2.49	0.88	3.04	3	0
323474	W45572	2.37	0.48	1.60	0.67	3.34	3	0
815542	AA456886	8.34	11.47	39.27	4.71	3.42	2	2
22040	T64837	1.53	0.75	6.62	4.33	8.77	2	1
789147	AA450189	0.79	0.70	2.40	3.03	3.44	2	1
196992	R93124	2.39	0.89	5.99	2.50	6.74	2	1
345034	W76320	0.86	0.88	4.32	5.01	4.93	2	0
882522	AA676466	3.18	2.00	13.31	4.19	6.65	2	0
324951	W48619	0.22	0.18	0.63	2.84	3.53	2	0
1416782	AA894557	4.33	5.07	19.30	4.46	3.80	1	1
784772	AA478542	2.65	2.17	7.09	2.67	3.26	1	0
32576	R20416	0.34	0.44	1.98	5.84	4.50	0	2
22411	T74141	1.24	0.49	5.16	4.15	10.44	0	2
30207	R40231	0.18	0.17	1.02	5.53	6.11	0	1
701481	AA287969	1.59	1.43	6.70	4.21	4.67	0	1
143887	R76394	3.47	5.09	12.14	3.49	2.38	0	1
609935	AA169154	0.13	0.11	0.34	2.54	3.05	0	1
1635022	AA995086	1.68	1.31	4.04	2.41	3.09	0	1
284583	N76192	1.58	0.64	2.06	1.30	3.21	0	1
289496	N63988	0.53	1.29	5.25	9.98	4.08	0	0
842863	AA489261	7.86	8.43	42.22	5.37	5.01	0	0
27769	R40176	0.34	0.33	1.67	4.90	5.04	0	0
1474390	AA922376	1.55	2.24	7.53	4.85	3.35	0	0
81475	T63587	0.93	0.94	4.37	4.71	4.65	0	0
76182	T59798	0.50	0.62	2.06	4.10	3.31	0	0
730794	AA436128	1.08	0.76	4.25	3.93	5.59	0	0
789091	AA453105	1.57	1.84	6.16	3.92	3.35	0	0
768370	AA495790	1.35	1.86	5.21	3.85	2.80	0	0
28422	R14230	0.30	0.82	1.16	3.82	1.42	0	0
139009	R62612	32.36	26.85	116.33	3.59	4.33	0	0
506369	AA709414	1.87	2.84	6.67	3.56	2.35	0	0
897770	AA598508	9.29	8.08	32.17	3.46	3.98	0	0
878152	AA775431	1.84	4.49	6.17	3.35	1.38	0	0
743568	AA609454	1.92	3.26	6.36	3.31	1.95	0	0
341680	W60414	0.27	0.23	0.88	3.29	3.81	0	0
284408	N52158	0.10	0.10	0.32	3.26	3.18	0	0
30894	R17731	0.37	0.43	1.20	3.23	2.76	0	0
154173	R52037	0.52	0.61	1.65	3.21	2.72	0	0
773443	AA428117	0.77	0.67	2.44	3.18	3.63	0	0

Clone	Accessi n #	HPV-16 p1	HPV-16 p6	HPV-16 p20	HPV-16 p20/ HPV-16 p1	HPV-16 p20/ HPV-16 p6	# of tumors	# of CINIII
795253	AA454004	1.39	1.33	4.37	3.15	3.30	0	0
147834	R81830	1.51	2.73	4.75	3.15	1.74	0	0
79624	T62627	0.89	1.19	2.77	3.11	2.33	0	0
1473438	AA916420	0.33	0.43	1.02	3.10	2.39	0	0
742074	AA405751	1.87	2.76	5.75	3.08	2.08	0	0
203132	H54628	1.04	0.74	3.17	3.04	4.31	0	0
504431	AA151244	0.44	0.34	1.28	2.91	3.80	0	0
309316	N93941	0.29	0.23	0.80	2.79	3.49	0	0
358316	W95757	0.12	0.10	0.32	2.78	3.22	0	0
67067	T70437	2.00	1.19	5.14	2.56	4.33	0	0
774446	AA446428	1.62	1.07	3.89	2.40	3.63	0	0
51711	H22917	2.29	1.76	5.39	2.36	3.06	0	0
428721	AA004638	1.77	1.33	4.03	2.28	3.03	0	0
504302	AA149509	2.10	1.34	4.57	2.18	3.41	0	0
144786	R77226	0.79	0.45	1.64	2.08	3.60	0	0
187616	R83758	0.43	0.28	0.88	2.02	3.11	0	0
49303	H15676	0.49	0.30	0.92	1.87	3.05	0	0
277138	N40919	0.41	0.19	0.77	1.87	4.05	0	0
48631	H14433	0.45	0.21	0.69	1.54	3.28	0	0
199610	R96552	0.97	0.39	1.42	1.47	3.60	0	0
897215	AA677504	1.85	0.70	2.61	1.41	3.72	0	0
502326	AA156674	1.75	0.77	2.32	1.32	3.00	0	0
897531	AA497002	0.66	0.19	0.87	1.32	4.59	0	0
809508	AA456446	1.12	0.43	1.43	1.27	3.30	0	0
296788	W01113	4.46	1.64	5.58	1.25	3.40	0	0
731459	AA412284	3.13	1.00	3.13	1.00	3.13	0	0
417976	W90659	1.81	0.50	1.63	0.90	3.24	0	0
49296	H15560	3.00	0.67	2.35	0.79	3.52	0	0
262231	H99170	3.38	0.55	2.43	0.72	4.43	0	0
743878	AA634434	8.64	1.67	5.63	0.65	3.36	0	0

Table 13

Clone Id	Accession #	Nuc Seq Id #	T_NC1_POOF	adePOOF_sNC1aN
22040	T72581, T64837	g689256, g673882	3.45	2.62211
22355	T89094, T74284	g717607, g690959	2.4	3.11172
22411	T74141, T82477	g690816, g709679	2.96	1.66529
25389	R11688, R17667	g764423, g771277	2.67	1.48819
34905	R19895, R45116	g774529, g823470	2.23	1.90118
37310	R49597, R34725	g825128, g791626	1	4.23522
40139	R53954	g815856	1.25	2.16876
41843	R52682, R52731	g814584, g814633	1.34	1.25155
47459	H11453, H11562	g876273, g876382	2.06	1.71713
50562	H16793, H16903	g883033, g883143	1.66	3.06505
50877	H18423, H18531	g884663, g884771	1.71	1
85840	T72089, T72235	g686610, g686756	2.35	1.59025
121436	T97457, T97458	g746802, g746803	1.77	2.61279
122159	T98611, T98612	g748348, g748349	2.12	1
139009	R62662, R62612	g834541, g834491	6.77	3.02112
142788	R71093, R71440	g844610, g844957	2.57	1.72856
144849	R78530, R78490	g854811, g854755	3.15	1.87128
146882	R80790, R80990	g857071, g857271	2.48	1.75850
153646	R48843, R48844	g810869, g810870	4.43	1.29420
196612	R92994, R93037	g965348, g965391	2.9	1
236034	H61242, H61243	g1014074, g1014075	1.69	2.66634
243741	N49629, N33920	g1190795, g1154320	1.86	5.42161
250654	H95960, H95959	g1109102, g1109101	3.13	1.37898
268736	N39282, N25945	g1162489, g1140293	1.66	1.65921
269815	N40099, N27159	g1163644, g1141507	3.34	1.34494
270385	N33063	g1153462	1	3.64959
278687	W01400, N62924	g1273380, g1210753	2.23	1.47306
280758	N50611, N50556	g1191777, g1191722	2.49	2.00587
290841	N99711, N71982	g1271153, g1228694	2.19	1.56425
291057	N72115, W00390	g1229219, g1271799	1.41	2.79327
291880	N67487, W03413	g1219612, g1275326	2.65	2.18052
296556	N73836	g1231121	4.11	2.06071
309288	W40404, N93924	g1324203, g1266233	1.93	2.38606
309583	W30772, N94424	g1311763, g1266733	1.93	1.27913
309893	W23937, N94487	g1300752, g1266796	2.5	1.68094
321902	W37573, W37448	g1319178, g1319062	1.81	2.38833
323238	W42723, W42812	g1327183, g1327272	1.4	2.32612
324225	W47350, W47454	g1332058, g1332114	1.41	2.97998
324437	W46900	g1331538	1.19	2.28024
324492	W51794	g1349845	2.55	3.07490
324513	W51909	g1349864	3.07	1
324951	W48619, W48852	g1337075, g1336981	2.91	1
344139	W69878, W69790	g1379158, g1379048	2.7	1
362059	AA001432, AA001431	g1437117, g1437116	2.71	1
366971	AA026682	g1492849	1.73	3.17220
378461	AA775616	g2834950	2.24	1
379920	AA778098	g2837499	2.66	3.87196

414994	W93067, W93189	g1422239, g1422342	2.9	1
418262	W90740	g1406686	2.75	1.39025
418279	W90323, W90793	g1406703, g1406759	2.01	2.89394
434776	AA701863	g2704976	2.81	1
435371	AA700758	g2703923	1.53	2.05078
436094	AA700832	g2703997	2.49	2.75414
451907	AA706968	g2716886	1.68	2.75612
460403	AA677534	g2658056	4.05	4.04623
470261	AA029012, AA028921	g1496414, g1496324	1.35	3.60825
502151	AA129777, AA133273	g1690188, g1690241	2.26	1.22342
503602	AA131299	g1692932	1.69	1.87741
509641	AA058323, AA058453	g1551160, g1551263	2.54	2.11292
510576	AA055768, AA055880	g1548168, g1548218	1	2.58405
526184	AA076645	g1616545	2.34	1
526657	AA133129, AA128607	g1689891, g1690002	1.93	1
549933	AA082747, AA102526	g1624805, g1647657	3.38	1.49339
588915	AA209529, AA157813	g1807490, g1732642	2.92	2.49271
589115	AA143331, AA143201	g1712719, g1712768	1.82	2.56982
590264	AA155942, AA155913	g1727633, g1727531	3.04	1.19988
624360	AA187014, AA181300	g1775140, g1764766	1.91	1.67799
627351	AA190380, AA190789	g1779229, g1779174	1.34	1.62637
664975	AA194833	g1784523	3.32	1
700721	AA285155, AA283961	g1928118, g1928304	2.01	2.13632
703581	AA278759, AA278921	g1920287, g1920387	2.62	1
714106	AA284669, AA284668	g1927580, g1927579	3.38	2.10895
725841	AA292283, AA292315	g1940263, g1940311	1.46	2.38397
731311	AA416767	g2077721	2.88	1
742132	AA406020, AA406019	g2064003, g2064002	2.18	2.38999
744047	AA629262	g2541649	1.75	2.89333
745283	AA625567	g2537954	3.03	3.12158
755599	AA419251, AA419286	g2078964, g2079016	2.29	2.05489
756556	AA481438, AA481677	g2210990, g2211229	1.47	1
756708	AA443903	g2156578	1.54	2.89427
769921	AA430504	g2111094	1.95	2.50272
769959	AA430642, AA430540	g2111215, g2111115	2.55	2.01941
770868	AA434487, AA434391	g2139401, g2139305	2.81	1.35001
771290	AA443622, AI732747	g2156297, g5053860	2.47	1.25090
773301	AA425217, AA425556	g2106125, g2106296	2.45	2.83659
782513	AA448478, AA432030	g2162148, g2115738	2.79	1.87141
786675	AA451904	g2165573	1	2.29911
787893	AA452404, AA452171	g2166073, g2165840	1.76	1
796613	AA461456	g2185320	2.57	1.30149
810017	AA454879, AA455222	g2177655, g2177998	2.52	1.63283
810326	AA464210, AA464142	g2189094, g2189026	1.46	2.52649
810512	AA464532, AA464630	g2189416, g2189514	2.82	1.21885
810754	AA480838, AA457728	g2210390, g2180448	2.84	3.13006
810859	AA458965, AA459180	g2183872, g2184087	3.14	3.18920
811024	AA485528, AA485371	g2214747, g2214590	3.09	3.49278

Table 13

813645	AA447746, AA453677	g2161416, g2167346	2.92	3.04129
813823	AA447781, AA453712	g2161451, g2167381	1.92	1
815526	AA457034, AA456878	g2179754, g2179598	2.28	4.16140
823851	AA490462, AA490684	g2219635, g2219857	2.43	1
824602	AA490996, AA491191	g2220169, g2220364	2.44	1.40170
825327	AA504479, AA504556	g2240639, g2240716	1.41	1
825647	AA504752, AA504654	g2240912, g2240814	1.98	2.45672
839991	AA490172	g2221047	3.39	1.20583
840726	AA487846, AA487845	g2215277, g2215276	2.29	1.72585
840788	AA486145, AA486085	g2216361, g2216301	2.45	1.68308
841207	AA486731	g2216895	2.36	3.93398
845415	AA644128	g2569346	1.57	2.39284
855786	AA664040	g2618031	2.86	2.61322
856447	AA630800	g2553411	3.39	1.62610
868304	AA634006	g2557220	2.24	1.74521
868368	AA634103	g2557317	2.6	2.16712
877641	AA488238, AA488185	g2215669, g2215616	2.73	1.76865
882510	AA676460	g2656982	1.74	2.36586
897910	AA598653	g2432236	2.99	2.32165
898062	AA598776	g2432448	2.04	2.60021
898092	AA598794	g2432466	2.51	1
898218	AA598601	g2432184	2.68	1.38486
949988	AA600214	g2433839	2.17	1.72518
970590	AA683077	g2668968	2.6	1.28300
1048993	AA778645	g2837976	2.96	2.20627
1323448	AA873604	g2969726	1.79	3.63583
1384851	AA857496	g2945798	2.08	3.58759
1388373	AA844124	g2930575	1.21	2.49733
1404774	AA845432	g2933191	3.42	1.71319
1455976	AA862371	g2954850	2.55	1.58007
1469292	AA863383	g2955862	1.87	1
1472775	AA872420	g2968598	3.17	2.00150
1473274	AA877166	g2986243	2.7	1
1474684	AA857015	g2945317	1.44	2.48067
1475421	AA857437	g2945739	2.12	1
1476065	AA873060	g2969182	2.49	2.81520
1574594	AA968896	g3144076	3.25	2.98393
1636495	AA999953	g3190508	2.02	3.53759